

SOLDIER'S MANUAL AND TRAINER'S GUIDE

MOS 11H

HEAVY ANTIARMOR WEAPONS

INFANTRYMAN

SKILL LEVELS 1/2/3/4

HEADQUARTERS

DEPARTMENT OF THE ARMY

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**MOS 11H
HEAVY ANTIARMOR WEAPONS INFANTRYMAN
SKILL LEVELS 1/2/3/4**

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*This publication supersedes STP 7-11H14-SM-TG, 30 September 1988.

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PREFACE

This publication is for skill level 1 through 4 soldiers holding military occupational specialty (MOS) 11H. It is also for trainers and first-line supervisors.

It contains standardized training objectives in the form of task summaries. Leaders use these task summaries to train and evaluate soldiers on critical tasks, which support unit missions during wartime.

Trainers and first-line supervisors must ensure that all soldiers who hold MOS 11H, skill levels 1 through 4, have access to the basic infantry task manuals:

- STP 7-11BCHM1-SM (to be published)
- STP 7-11BCHM24-SM-TG (to be published)
- STP 7-11BCHM14-SM-TG (30 September 1988)

Each contains tasks that all infantry MOSs share. Units must ensure both manuals availability at each of the following locations:

- The soldier's work area.
- The unit's learning center.
- The unit's libraries.

This manual applies to both Active and Reserve Components. The proponent of this publication is the United States Army Infantry School. Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to--

Commandant, USAIS
ATTN: ATSH-OTT-F/Building 4
Fort Benning, GA 31905-5593
hammond@benning.army.mil

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

CHAPTER 1

INTRODUCTION

This soldier's manual (SM) identifies the individual MOS training requirements for soldiers in MOS 11H. Commanders, trainers, and soldiers should use it to plan, conduct, and evaluate individual training in units. This manual is the primary MOS reference to support self-development and training for every soldier. Leaders use this manual along with STP 21-1-SMCT and STP 21-24-SMCT (the common task soldier's manuals), Army Training and Evaluation Programs (ARTEPs), and FM 25-101. Leaders use these tools to establish effective training plans and programs that integrate soldier, leader, and collective tasks.

1-1. TASK SUMMARIES

The task summaries in Chapter 3 of this SM outline the wartime performance requirements of each critical task in the SM. They provide the soldier and the trainer with the information needed to prepare, conduct, and evaluate critical task training. As a minimum, task summaries include information the soldier must know and the skills he must perform to standard(s) for each task. The format for the task summaries included in this SM is as follows:

- a. **Task Title.** The task title identifies the action the soldier must perform.
- b. **Task Number.** A ten-digit number identifies each task. Include this task number, along with the task title, in any correspondence pertaining to the task.
- c. **Conditions.** The task conditions statement identifies—
 - (1) All the equipment, tools, references, job aids, and supporting personnel that the soldier needs to use to perform the task in wartime.
 - (2) Any environmental conditions that could alter task performance such as visibility, temperature, or wind.
 - (3) Any specific cues or events that trigger task performance such as a chemical attack or identification of a threat vehicle.
- d. **Standards.** The task standard(s) describes how well and to what level the soldier must perform the task under wartime conditions, and it measures the accuracy, completeness, or speed of performance.
- e. **Training and Evaluation.** This element includes one mandatory and two optional subelements.
 - (1) *Training Information Outline.* This optional subelement provides detailed training information.
 - (2) *Evaluation Preparation.* This optional subelement states how to train and evaluate to wartime conditions. It may also include special preparation instructions and instructions to read to the soldier before the evaluation.
 - (3) *Evaluation Guide.* This mandatory subelement identifies the specific actions (performance measures) that the soldier must perform correctly in order to complete the task successfully. This manual provides the performance measures for each task in a pass/fail format for easy evaluation.

f. **References.** This element identifies resources that explain task performance requirements in more detail than does the task summary.

g. **Dangers, Warnings and Cautions.** These statements alert the user to the possibility of immediate consequences if he does not follow instructions. Look for such statements in the following formats:

<p style="text-align: center;">DANGER</p> <p>ALERTS USER TO POSSIBILITY OF DEATH IF HE DOES NOT FOLLOW INSTRUCTIONS CORRECTLY.</p>
<p style="text-align: center;">WARNING</p> <p>Alerts user to possibility of injury if he does not follow instructions correctly.</p>
<p style="text-align: center;">CAUTION</p> <p>Alerts user to possibility of equipment damage if he does not follow instructions correctly.</p>

h. **Notes.** Look for notes in the following format throughout the manual:

NOTE: Notes provide a supportive explanation or hint that relates to the performance standards.

1-2. TRAINING SUPPORT

This manual includes the following appendixes and information:

a. **Appendix A, Proponent School or Agency Codes.** The first three digits of a task number indicate its proponent agency or school. This appendix provides a key to proponent codes for the tasks in this soldier's manual.

b. **Appendix B, Example Completed Forms.** This appendix provides completed examples of DA Form 5164-R and DA Form 5165-R. The example completed DA Form 5165-R reflects the tasks in this soldier's manual. Using this form may help preclude writing the soldier tasks associated with the unit's METL. The leader can include the completed form in his leader book.

c. **Glossary.** This is a comprehensive list of acronyms, abbreviations, definitions, and letter symbols used in this manual.

d. **References.** This is not the same as the reference list included at the end of each task summary. This element has four parts:

(1) *Documents needed.* This includes any resources listed in the task conditions statements in Chapter 3. These are the same resources as those listed in each task summary under references, required at the end of each task. The soldier must have all the resources listed in the task summary conditions statement in order to perform the task.

(2) *Readings recommended.* This includes any resources that may help the trainer prepare to train the tasks in this manual. Leaders do not need these resources for training or evaluation.

(3) *Referenced forms.* This lists the forms referenced in this manual.

(4) *Other resources.* This lists nonprint resources.

1-3. SOLDIER'S RESPONSIBILITIES

Each soldier is responsible for performing individual tasks that the first-line supervisor identifies based on the unit's mission-essential task list (METL). The soldier must perform the task to the standards listed in the SM. If a soldier has a question about how to do a task or which tasks he must perform, he must ask the first-line supervisor for clarification. The first-line supervisor knows how to perform each task, or he can direct the soldier to the appropriate training materials.

1-4. NCO SELF-DEVELOPMENT AND THE SOLDIER'S MANUAL

Self-development is one of the most important components of the leader development program. It is a planned, progressive, and sequential program followed by leaders to enhance and sustain their military competencies. It consists of individual study, research, professional reading, practice, and self-assessment. Under the self-development concept, the NCO, as an Army professional, has the responsibility to remain current in all phases of MOS proficiency. An important resource for NCO self-development is DA Pamphlet 351-20, Army Correspondence Course Program Catalog, which provides information about enrolling and a list of courses. NCOs can also write to the following address for more information:

Army Institute for Professional Development
US Army Training Support Center
ATTN: ATIC-IPS
Newport News, VA 23628

CHAPTER 2

TRAINER'S GUIDE

This trainer's guide (TG) explains the essential components of a unit-training plan for individual training. Units have different training needs and requirements based on differences in environment, location, equipment, dispersion, and similar factors. Therefore, the TG is only a guide for conducting unit training--it is not a rigid standard. It provides information necessary for planning training requirements for the MOS as shown in Figure 2-1.

TABLE NO.	DESCRIPTION	PAGE
Table 2-1	Relates battle-focused training to STP.	2-2
Table 2-2	Lists subject areas by number and name.	2-7
Table 2-3	Recommends a strategy for training soldiers to perform higher level tasks (duty position training).	2-8
Table 2-4	<p>Lists by subject area the critical tasks to be trained-</p> <ul style="list-style-type: none">• Recommends how often to train each task to sustain proficiency.• Recommends a strategy to cross-train soldiers. <p>Codes indicate where (TNG LOC) and how often (SUST TNG FREQ) to train each task. The table legend explains the brevity codes used in the table.</p>	2-9 through 2-26

Figure 2-1. Key to tables in this chapter.

2-1. BATTLE-FOCUSED TRAINING

The commander first defines the METL IAW FM 25-100 and FM 25-101. The battle-focused training process ensures that leaders identify and train the tasks that are most important for the wartime mission. This process also ensures training meets established objectives and standards. Specifically, unit leaders--

- Use the METL to identify the collective, leader, and soldier tasks that support accomplishment of the METL.
- Assess the status of training.
- Lay out the training objectives and a plan for accomplishing needed training.
- Prepare long-range and short-range plans.
- Execute and evaluate training.
- Reassess the unit's training preparedness.
- Restart the training management cycle.

2-2. RELATIONSHIP OF SOLDIER TRAINING PUBLICATIONS (STPs) TO BATTLE-FOCUSED TRAINING

The two key components of any STP are the soldier's manual and the TG. Each gives leaders important information to help implement the battle-focused training process. The TG relates soldier and leader tasks in the MOS and skill level to duty positions and equipment. It states where the task is trained, how often training should occur to sustain proficiency, and who in the unit should be trained. As leaders assess and plan training, they should rely on the TG to help identify training needs.

- a. Leaders conduct and evaluate training based on Armywide training objectives and on the standards in the soldier's manual task summaries. Following the task summaries ensures--
 - That trainers in every unit and location define task standards the same way.
 - That trainers evaluate all soldiers to the same standards.
- b. *Table 2-1* shows how battle-focused training relates to the TG and soldier's manual.
 - The left column shows the steps involved in training soldiers.
 - The right column shows how the STP supports each of these steps.

BATTLE-FOCUS PROCESS	STP SUPPORT PROCESS
Select supporting soldier tasks	Use TG to relate tasks to METL
Conduct training assessment	Use TG to define what soldier tasks to assess
Determine training objectives	Use TG to set objectives
Determine strategy; plan for training	Use TG to relate soldier tasks to strategy
Conduct pre-execution checks	Use soldier's manual to determine training preparation
Execute training; conduct AAR	Use soldier's manual task summary as source for task performance
Evaluate training against established standards	Use soldier's manual task summary as standard for evaluation

Table 2-1. Relationship of battle-focused training and STP.

2-3. TRAINER'S RESPONSIBILITIES

NCO trainers must train all soldier and leader tasks to standard and must relate all training to collective, mission-essential tasks. In order to plan and evaluate training, trainers must--

- a. **Identify Soldier and Leader Training Requirements.** Using the commander's training strategy and the unit's METL, ARTEP, and MOS training plan (from the TG), the trainer decides which tasks to train.

b. **Plan the Training.** The trainer uses the ARTEP to identify which soldier and leader tasks he can evaluate and train at the same time he evaluates and trains collective tasks. For example, he may be able to do one or more of the following:

- *Train with.* Integrate training for some tasks into collective training.
- *Train at the same time.* Train some tasks at the same time as collective training.
- *Train between.* Train some tasks during slack periods between collective training.

c. **Gather the Training References and Materials.** Each soldier's manual task summary lists the references for that task. The trainer uses these references to get ready to train the task.

d. **Assess Risk and Identify Safety Concerns.** The trainer analyzes the risk involved in training a specific task--

- Under current conditions.
- At the time of scheduled training.
- Subject to the cautions, warnings, and dangers associated with each task.

e. **Train Each Soldier.** The trainer explains each task step-by-step and shows the soldier how to perform it to standard. Each soldier must have at least one chance to perform the task step-by-step.

f. **Emphasize Training in MOPP4 Clothing.** Performing even a simple task is difficult in a nuclear or chemical environment. Individual and unit combat effectiveness degrades quickly when soldiers are wearing MOPP4 clothing. Practice is the only way to improve performance. The trainer must train and evaluate soldiers who are wearing MOPP4. Only by doing so can he ensure they will be able to perform critical wartime tasks to standard in a real nuclear or chemical environment.

g. **Check each Soldier.** The trainer evaluates how well each soldier performs the tasks in this manual. He evaluates each person's performance during individual training sessions or during the conduct of unit collective tasks. This manual provides an evaluation guide for each task. Trainers use the evaluation guide to conduct year-round, hands-on evaluation of each task critical to the unit's mission. The trainer uses the MOS training plan to decide how often to train the soldiers on each task in order to sustain their proficiency.

h. **Record the Results.** The leader book referred to in FM 25-101, Appendix B, records task performance. Using this book allows the leader complete flexibility as to what method to use to record training. The trainer may use DA Form 5164-R (Hands-On Evaluation) and DA Form 5165-R (Field-Expedient Squad Book) as part of the leader book. These forms are optional. They can find the original, reproducible forms in the back of STP 21-24-SMCT, which also contains instructions for using both forms, and can reproduce the forms locally on 8 1/2 by 11-inch paper. Appendix B in the back of this manual provides examples of completed DA Forms 5164-R and 5165-R.

i. **Retrain and Evaluate.** Trainers work with each soldier until he can perform the task to specific soldier's manual standards.

2-4. EVALUATION GUIDE

Every task summary in the soldier's manual has an evaluation guide. Trainers use these guides year-round to determine if soldiers can perform critical tasks to soldier's manual standards. Each evaluation guide has one or more numbered performance measures.

- a. A performance measure states what a soldier must do to pass each task step.

b. If the soldier performs the task step as described in the performance measure, the trainer writes a "P" (pass) in the results column next to that step.

c. If the soldier does not perform the task step as described in the performance measure, the trainer writes an "F" (fail) in the results column next to that step.

d. Some tasks require the trainer to watch to be sure that the soldier performs the task properly. Others require the trainer to evaluate the "end product" of the soldier's performance of the task. Before using the evaluation guide to evaluate the soldier's performance, trainers must--

(1) *Get to know the task.* Review the evaluation guide to familiarize themselves with the performance measures before they evaluate the soldier.

(2) *Get the "stuff."* Ensure that the necessary safety equipment and clothing are on hand to enable soldiers to properly perform the task at the training site.

(3) *Get the site ready.* Prepare the test site according to the conditions section of the task summary. Some tasks contain special evaluation preparation instructions. These instructions tell the trainer what modifications must be made to the task conditions to evaluate the task. After evaluating each soldier, the trainer must reestablish the test site so that it meets the original requirements. This ensures conditions remain the same for each soldier.

(4) *Advise the soldier.* Before evaluating the task, read aloud the "brief soldier" section of the task summary.

(5) *Score the task.* Score each soldier according to the performance measures (as previously described) in the evaluation guide and the feedback section after the evaluation guide.

(6) *Record the results.* Record the date and task performance (GO or NO-GO) in the leader book.

2-5. TRAINING TIPS FOR THE TRAINER

This paragraph tells you, the trainer, how to prepare to train each task, how to train it, and how to record the results.

a. Prepare Yourself.

(1) Find out from your chain of command when training must take place, what soldiers to train, what resources are available, and what training site to use.

(2) Get the training objective (the task conditions and standards) from the task summary in this manual.

(3) Make sure you can do the task. Review the task summary and the sources in the reference section. Practice doing the task or, if you have to, find someone qualified to train you to meet the task's standards.

(4) Choose a training method. Some tasks recommend training methods in the setup portion of the task summary.

(5) Prepare a training outline. This is just your own notes about what you need to cover in the training session.

(6) Practice your training presentation.

b. Prepare the Resources.

(1) Get the "stuff" you need as stated in the conditions statement (in every task) and in the setup statement (in some tasks).

(2) Gather equipment; make sure it all works.

(3) Coordinate training aids and devices. Arrange for them to be available and working when you train the task.

(4) Prepare the training site IAW the conditions statement, setup statement (if any), and the evaluation preparation section of the task summary.

c. Prepare the Soldiers.

(1) Tell the soldier whom you are training what task he must perform and how well he must perform it. This information is provided in the standards and evaluation preparation for each task.

(2) Caution soldiers about safety, environmental, and security issues.

(3) Provide any prerequisite training on basic skills that the soldiers must have before they can train on the task.

(4) Pretest by having each soldier perform the task before the training. This will help you to see who needs training in what areas. Use the evaluation guide in each task summary to evaluate the soldier's performance. Record the results on DA Form 5164-R.

d. Train the Soldiers Who Fail the Pretest.

(1) Show soldiers who failed the task how to correctly perform the task or the specific task steps (performance measures) that they failed.

(2) Have the soldiers study the appropriate training materials.

(3) Have soldiers practice the task until they can perform it to soldier's manual standards.

(4) Evaluate each soldier again based on the evaluation guide, and record results on DA Form 5164-R.

(5) Give the required feedback to soldiers who fail to perform to soldier's manual standards. Have them continue to practice until they can do so.

e. Record the Results in the Leader Book.

2-6. MOS TRAINING PLAN

One of the key components of the TG is the MOS training plan. This two-part plan helps the commander prepare a unit-training plan. The MOS training plan must satisfy integration, cross-training, train-up, and sustainment training requirements for all soldiers in this MOS.

a. Part I. This part of the MOS training plan relates the duty positions within an MOS skill level to applicable critical tasks. The plan groups critical tasks into subject areas by task commonality. Part I of the MOS training plan has two sections. Section 1 lists the subject area codes and titles that are used throughout the MOS training plan (*Table 2-2, page 2-7*). Section 2 defines the training requirements for each duty position within an MOS and recommends relevant cross-training and train-up/merger training (*Table 2-3, page 2-8*). To prepare Part I of the MOS training plan, the commander includes the following elements as described:

(1) *Duty position*--by skill level (different skill levels have different training requirements).

(2) *Subject area numbers*--those subject areas in which the soldier must achieve proficiency for that duty position.

(3) *Cross-train column*--duty positions for which soldiers should receive cross-training.

(4) *Train-up/merger column*--corresponding duty position for the next higher skill level or MOS the soldier will merge into on promotion.

b. Part II. This part of the MOS training plan lists by subject areas the critical tasks to be trained in an MOS. For each task, it gives the task number and title, training location and

skill level, and sustainment training frequency (*Table 2-4, page 2-9*). To prepare Part I of the MOS training plan, the commander includes the following elements as described. *Figure 2-2* shows an example format for Part II of the MOS training plan.

(1) *Subject area*--the subject area by number and title in the same order as in the MTP.

(2) *Task number*--the task number of each task in the subject area.

(3) *Task title*--the task title of each task in the subject area.

(4) *Training location*--the location where the task is first trained to STP standards. Include a legend in the training plan to identify any acronyms or abbreviations used.

(5) *Sustainment training frequency column*. This indicates the suggested frequency at which the tasks should be trained. The cornerstone of the individual training program is the concept of sustaining proficiency. The soldier must be prepared to go to war on short notice. To sustain proficiency, the individual soldier must train--evaluate--train. Sustainment requires practice and repetition. Training emphasis must always be on sustaining skills and correcting weaknesses at the same time. The commander should use the frequency codes only as a guide. Based on evaluations, he may decide that his soldiers need more or less training on certain tasks.

(6) *Sustainment training skill level column*. This lists the skill levels of the MOS for which soldiers must receive sustainment training to ensure they maintain proficiency to soldier's manual standards.

(7) *Drill/ARTEP column*. This column lists drills and ARTEPs by the number that the individual critical task supports and links individual and collective training.

TASK TITLE		LEGEND:	SUSTAINMENT TRAINING FREQUENCY		SUSTAINMENT TRAINING SKILL LEVEL	
TASK NUMBER	CRITICAL TASK NO	A = Advanced NCO Course (ANCO) B = Basic NCO Course (BNCO) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP MD = MTP/Drill			
	CRITICAL TASK TITLE		REFERENCES	TNG LOC	SUST TNG FREQ	SUST TNG SL
	SKILL LEVEL 1					ARTEP MTP (M) OR DRILL (D)
	SUBJECT AREA 1—RBC, BASIC TASKS					
	031-507-1021	Mark NBC Contaminated Area	FM 3-3, TM 3-9905-001-10	U	SA	1-4
	031-503-1004	Protect Yourself from Chemical and Biological Injury/Contamination Using Your M17-Series Protective Mask with Hood	FM 3-3, TM 3-9940-279-10	O	QT	1-4
SUBJECT AREA			TRAINING LOCATION			DRILL OR ARTEP

Figure 2-2. Example format for Part II of MOS training plan.

MOS TRAINING PLAN, MOS 11H Part I: Subject Areas And Duty Positions Section 1: Subject Area Codes	
SKILL LEVEL 1	
1.	NBC
2.	Security and Intelligence
3.	Night Vision Devices
4.	Communications
5.	Personal Hygiene
6.	M16A1/M16A2 Rifle
7.	M249 Machine Gun
8.	M203 Grenade Launcher
9.	M136 Launcher
10.	M9 Pistol
11.	M9 Pistol
12.	M60 Machine Gun
13.	Caliber .50 M2 Machine Gun
14.	MK 19, 40-mm Grenade Machine Gun, MOD 3
15.	Mines
16.	Individual Techniques
17.	TOW General
18.	M901 Vehicle
SKILL LEVEL 2	
19.	Communications
20.	Basic Individual Techniques
21.	Land Navigation
22.	NBC
23.	Reconnaissance and Security
24.	Basic Tactics
25.	Caliber .50 M2 Machine Gun
26.	Mines
27.	TOW General
28.	M966 Vehicle
29.	M901 Vehicle
SKILL LEVEL 3	
30.	Basics Tactics
SKILL LEVEL 4	
31.	NBC
32.	Basic Tactics

Table 2-2.
Subject area codes, MOS 11H individual training plan.

MOS TRAINING PLAN, MOS 11H Part I: Subject Areas And Duty Positions Section 2: Duty Positions				
SL	DUTY POSITION	SUBJECT AREA	CROSS-TRAIN	TRAIN-UP/MERGER TRAINING
1	DRIVER, LOADER, GUNNER	1-17	All	NA
2	SQUAD LEADER	1-30	All	NA
3	SECTION LEADER	1-30	All	NA
4	PLATOON SERGEANT	1-32	All	NA

Table 2-3. Part I, Section 2, duty position training MTP.

TRAINING NOTES:

1. Leaders must instill an awareness of individual safety and force protection in all subordinate leaders and soldiers. Soldiers must be constantly alert and avoid situations that may result in injury or death, for example--
 - Lock cargo hatches.
 - Avoid grabbing the hot barrel of a machine gun.
2. Soldiers must know what their equipment can do. This will keep them from receiving injuries from other soldiers, from machinery, or from equipment.
3. Leaders at all levels must teach and enforce force protection, for example--
 - Properly use ground guides for vehicle movement.
 - Always know your buddy's location during live-fire exercises.
 - Enter and exit a helicopter properly.
 - Recheck all mortar firing data.

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1						
SUBJECT AREA 1-- NBC, BASIC TASKS						
031-507-1021	Mark NBC Contaminated Area	FM 3-3, TM 3-9905-001-10	U	SA	1-4	7-91 M
031-503-1004	Protect Yourself from Chemical and Biological Injury/Contamination Using Your M17-Series Protective Mask with Hood	FM 3-3, TM 3-4240-279-10	O	QT	1-4	7-91 M
031-507-1022	Decontaminate Equipment Using M13 Decontaminating Apparatus, Portable	FM 3-5, TM 3-4230-214-12&P	U	A	1-4	7-91 M
031-503-1005	Maintain Your M17-Series Protective Mask with Hood	FM 3-3, TM 3-4240-279-10 TM 3-4240-280-10 TM 3-4240-300-10-1	O	QT	1-4	7-91 M
031-503-1006	Protect Yourself from NBC Injury/Contamination When Drinking from Your Canteen While Wearing Your Protective Mask	FM 3-3, TM 3-4240-279-10 TM 3-4240-280-10 TM 3-4240-300-10-1	O	QT	1-4	7-91 M
031-503-1007	Decontaminate Your Skin and Personal Equipment Using an M258A1 Kit	TM 3-4240-279-10 TM 3-4240-280-10	U	A	1-4	7-91 M
031-503-1008	Protect Yourself from Chemical and Biological Injury/Contamination While Eliminating Body Waste When Wearing MOPP 4	FM 3-4 FM 21-11	O	A	1-4	7-91 M
031-503-1011	Maintain Your M24 or MM25-Series Protective Mask with Hood	DA Pam 738-750 TM 3-4240-280-10	U	QT	1-4	7-91 M
031-503-2002	Decontaminate Equipment Using ABC M11 Decontaminating Apparatus	TM 3-4230-204-12&P	U	SA	1-4	7-91 M
031-503-1012	Protect Yourself from Chemical and Biological Injury/Contamination Using Your M24 or M25-Series Protective Mask with Hood	TM 3-4240-279-10 TM 3-4240-280-10	U	QT	1-4	7-91 M
031-503-1014	Identify Chemical Agents Using M8 Detector Paper	TM 3-6665-311-10	O	QT	1-4	7-91 M
031-503-1015	Protect Yourself from NBC Injury/Contamination with Mission-Oriented Protective Posture (MOPP) Gear	FM 3-4	O	QT	1-4	7-91 M
031-503-1018	React to a Nuclear Hazard	FMs 3-3, 3-4	O	QT	1-4	7-91 M
031-503-1019	React to Chemical Biological Hazard/Attack	FMs 3-4, 21-60	O	QT	1-4	7-91 M
031-503-1020	Detect Chemical Agents Using M9 Paper	TM 3-6665-311-10	O	QT	1-4	7-91 M
031-503-1023	Protect Yourself from NBC Injury/Contamination When Changing Mission-Oriented Protective Posture (MOPP) Gear	FM 3-5	U	SA	1-4	7-91 M
031-503-1024	Replace Canister on Your M40-Series Protective Mask	TM 3-4240-300-10-1	U	A	1-4	7-91 M
031-503-1025	Protect Yourself from Chemical and Biological Injury/Contamination Using Your M40-Series Protective Mask with Hood	TM 3-4240-300-10-2	U	A	1-4	7-91 M
031-503-1026	Maintain Your M40-Series Protective Mask with Hood	TM 3-4240-300-10-1	U	A	1-4	7-91 M
031-503-1028	Protect Yourself from Chemical and Biological Injury/Contamination Using Your M42 Protective Mask with Hood	TM 3-4240-300-10-2	U	A	1-4	7-91 M
031-503-1029	Maintain Your M42 Protective Mask with Hood	TM 3-4240-300-10-2	U	A	1-4	7-91 M

Table 2-4. Critical tasks by subject areas.

CRITICAL TASK NO	LEGEND:		TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill				
CRITICAL TASK NO	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 1 -- NBC, BASIC TASKS (Continued)						
031-503-1030	Prepare the Chemical Agent Monitor for Operation	FM 3-100	U	A	1-4	7-91 M
031-503-1031	Put the Chemical Agent Monitor into Operation	FM 3-100	U	A	1-4	7-91 M
031-503-1032	Prepare the Chemical Agent Monitor for Movement or Storage	FM 3-100	U	A	1-4	7-91 M
031-503-1033	Decontaminate your Skin Using the M291 Skin Decontaminating Kit (SDK)	TM 3-4230-229-10	O	QT	1-4	7-91 M
031-503-1034	Decontaminate Your Individual Equipment Using the M295 Individual Equipment Decontamination Kit (IEDK)	TM 3-4230-235-10	U	A	1-4	7-91 M
031-506-1052	Protect Yourself and Others from Chemical and Biological Injury/Contamination by Using (Entering or Exiting) a Collective Protection Shelter	FM 3-4	U	A	1-4	7-91 M
031-507-1002	Decontaminate Equipment Using ABC M11 Decontaminating a Apparatus	TM 3-4230-204-12	U	A	1-4	7-91 M
031-507-2006	Conduct Hasty Decontamination	TM 3-4230-204-12	U	A	1-4	7-91 M
SUBJECT AREA 2 -- SECURITY AND INTELLIGENCE, BASIC TASKS						
071-331-0808	Identify Threat Weapons	FM 7-8, FM 100-2-3	O	QT	1-4	7-91 M/D
071-730-0008	Emplace Field-Expedient Early Warning Devices	FM 5-25, FM 5-34	U	QT	1-4	7-91 M
071-331-0801	Challenge Persons Entering Your Area	STP 21-1-SMCT	O	QT	1-4	7-91 M
071-331-0804	Perform Surveillance Without the Aid of Electronic Devices	STP 21-1-SMCT	U	QT	1-4	7-91 M
071-331-0815	Practice Noise, Light, and Litter Discipline	STP 21-1-SMCT	O	QT	1-4	7-91 M
071-730-0001	Emplace Pyrotechnic Early Warning Devices	FM 5-25, FM 5-34	U	QT	1-4	7-91 M
071-730-0002	Recover Pyrotechnic Early Warning Devices	FM 5-25, FM 5-34	U	QT	1-4	7-91 M
301-348-1050	Report Information of Potential Intelligence	FM 5-25, FM 5-34	U	QT	1-4	7-91 M
878-920-1002	Recognize Friendly and Threat Armored Vehicles and Aircraft	STP 21-24-SMCT	U	QT	1-4	7-91 M
SUBJECT AREA 3-- NIGHT VISION DEVICES, BASIC TASKS						
071-315-0003	Operate a Night Vision Sight AN/PVS-4	TM 11-5855-213-10	O	QT	1-4	7-91 M
071-315-0030	Operate Night Vision Goggles AN/PVS-5	TM 11-5855-238-10	O	QT	1-4	7-91 M
071-315-0031	Maintain Night Vision Goggles AN/PVS-5	TM 11-5855-238-10	O	QT	1-4	7-91 M
071-710-0001	Maintain a Night Vision Sight AN/PVS-4	TM 11-5855-213-10	O	QT	1-4	7-91 M
071-710-0008	Operate Night Vision Goggles AN/PVS-7	TM 11-5855-246-10	O	QT	1-4	7-91 M
071-710-0009	Maintain Night Vision Goggles AN/PVS-7	TM 11-5855-246-10	O	QT	1-4	7-91 M
SUBJECT AREA 4 -- COMMUNICATIONS, BASIC TASKS						
071-820-0003	Install Communications Wire Lines	FM 24-20	U	SA	1-4	7-91 M
113-820-0004	Recover Communications Wire Lines	FM 24-20	U	SA	1-4	7-91 M
113-588-1087	Install Hot Loop	FM 24-20	U	QT	1-4	7-91 M
113-588-4025	Repair Telephone Cable WD-1 (J)/TT or WF-16/U	FM 24-20	U	QT	1-4	7-91 M
071-820-0001	Operate Telephone Set TA-1/PT	TM 11-5805-243-12	U	QT	1-4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 4 -- COMMUNICATIONS, BASIC TASKS (Continued)						
071-820-0002	Install Telephone Set TA-1/PT	TM 11-5805-243-12	U	QT	1-4	7-91 M
113-571-1022	Perform Voice Communications	FM 21-26 FM 21-31	U	QT	1-4	7-91 M
113-572-4008	Transmit a Voice United States Message Text Format (USMTF) Message	FM 24-20	U	QT	1-4	7-91 M
113-572-5005	Receive a Voice United States Message Text Format (USMTF) Message	FM 24-20	U	QT	1-4	7-91 M
113-573-8006	Use an Automated Signal Operation Instruction (SOI)	FM 24-20	U	QT	1-4	7-91 M
113-594-2005	Install and Operate Switchboard, Telephone, Manual SB-993/GT	FM 24-20	U	A	1-4	7-91 M
113-594-2014	Operate Switchboard, Telephone, Manual SB-22/PT	FM 24-20	U	A	1-4	7-91 M
113-600-1023	Install Tactical Telephone	FM 24-20	U	A	1-4	7-91 M
113-600-2007	Operate Telephone Set TA-312/PT	TM 11-5805-201-12	O,B,T	QT	1-4	7-91 M
113-600-3015	Perform Operation PMCS on Tactical Telephone Sets	FM 24-20	U	A	1-4	7-91 M
071-326-0600	Use Visual Signaling Techniques While Dismounted	FM 24-20	O	A	1-4	7-91 M
SUBJECT AREA 5 -- COMMUNICATIONS, RADIO						
071-810-0003	Construct a Field-Expedient Antenna	FM 24-18, SH 7-180	U	A	1-4	7-91 M
071-810-0004	Maintain Intercommunications Set AN/VIC-1 on a Track Vehicle (Includes FM Radio)	TM 11-5830-340-12	U	A	1-4	7-91 M
113-571-1004	Operate in Radio Nets	FM 24-18 SH 7-180	U	A	1-4	7-91 M
113-573-6001	Recognize Electronic Countermeasures (ECM) and Implement Electronic Counter-Countermeasures (ECCM)	SH 7-180	U	A	1-4	7-91 M
113-573-7017	Prepare/Submit Operator's (MJI) Report	FM 24-18 SH 7-180	U	A	1-4	7-91 M
113-587-1064	Prepare SINCGARS (Manpack) for Operation	TM 11-5820-890-10-1&2	O	A	1-4	7-91 M
113-587-2059	Operate Radio Set AN/PRC-77 with TSEC/KY-57	TM 11-5820-667-12	U	A	1-4	7-91 M
113-587-2061	Operate Radio Set AN/VRC-64 or AN/GRC-160 with TSEC/KY-57	TM 11-5820-498-12 TM 11-5820-401-10-1	U	A	1-4	7-91 M
113-587-1064	Operate Radio Set AN/VRC-12-Series with TSEC/KY-57	FM 24-18 SH 180	U	A	1-4	7-91 M
113-587-2070	Operate Secure SINCGARS Single Channel (SC)	TM 11-5820-890-10-1	O	A	1-4	7-91 M
113-587-2071	Operate Secure SINCGARS Frequency Hopping (FH) (Net Members)	TM 11-5820-890-10-1	O	A	1-4	7-91 M
113-587-2072	Operate Secure SINCGARS Frequency Hopping (FH) Net Control Station (NCS)	TM 11-5820-890-10-1	U	A	1-4	7-91 M
113-587-2075	Operate Secure SINCGARS Data Operations	TM 11-5820-890-10-1	U	A	1-4	7-91 M
113-587-2076	Operate Secure SINCGARS Using Control Monitor (CM)	TM 11-5820-890-10-1	U	A	1-4	7-91 M
113-587-2077	Operate SINCGARS Remote Control Unit (RCU)	TM 11-5820-890-10-1	U	A	1-4	7-91 M
113-622-2011	Operate Intercommunications Set AN/VIC-1 on a Tracked Vehicle (Includes FM Radio)	TM 11-5820-340-12	U	A	1-4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND:	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 6-- M16A1/A2 RIFLE, BASIC TASKS						
071-311-2006	Construct Field-Expedient Firing Aids for an M16A1 or M16A2 Rifle	FMs 7-7, 7-8, 7-70, 21-75	O	SA	1-4	7-91 M
071-315-2307	Zero a Night Vision Sight AN/PVS-4 to an M16A1 or M16A2 Rifle	TM 11-5855-213-10	O	SA	1-4	7-91 M
071-315-2308	Engage Targets With an M16A1 or M16A2 Rifle Using a Night Vision Sight AN/PVS-4	TM 11-5855-213-10	O	Q	1-4	7-91 M
071-008-0001	Mount a Night Vision Sight AN/PVS-4 on an M16A1 or M16A2 Rifle	TM 11-5855-213-10	O	Q	1-4	7-91 M
071-311-2004	Zero an M16A1 Rifle	TM 9-1005-249-10	O	A	1-4	7-91 M
071-311-2007	Engage Targets With an M16A1 or M16A2 Rifle	TM 9-1005-249-10	O	SA	1-4	7-91 M
071-311-2025	Maintain an M16A1 or M16A2 Rifle	TM 9-1005-249-10 FM 23-9	O	Q	1-4	7-91 M
071-311-2026	Perform a Function Check on an M16A1 or M16A2 Rifle	TM 9-1005-249-10 FM 23-9	O	Q	1-4	7-91 M
071-311-2027	Load an M16A1 or M16A2 Rifle	TM 9-1005-249-10 FM 23-9	O	Q	1-4	7-91 M
071-311-2028	Unload an M16A1 or M16A2 Rifle	TM 9-1005-249-10 FM 23-9	O	Q	1-4	7-91 M
071-311-2029	Correct Malfunction of an M16A1 or M16A2 Rifle	TM 9-1005-249-10 FM 23-9	O	Q	1-4	7-91 M
071-311-2030	Zero an M16A2 Rifle	TM 9-1005-249-10 FM 23-9	O	A	1-4	7-91 M
SUBJECT AREA 7 - M249 MACHINE GUN, BASIC TASKS						
071-010-0006	Engage Targets with an M249 Machine Gun	TM 9-1005-201-10	O	Q	1-4	7-91 M
071-312-4004	Lay an M249 Machine Gun Using Field Expedients	FM 23-14	U	Q	1-4	7-91 M
071-312-4025	Perform Operator Maintenance on an M249 Machine Gun	FM 23-14, TM 9-1005-201-10	O	Q	1-4	7-91 M
071-312-4027	Load an M249 Machine Gun	FM 23-14, TM 9-1005-201-10	O	Q	1-4	7-91 M
071-312-4030	Zero an M249 Machine Gun	TM 9-1005-201-10	O	A	1-4	7-91 M
071-010-0001	Zero Night Vision Sight AN/PVS-4 to an M249 Machine Gun	TM 9-1005-201-10 FM 23-14	U	SA	1-4	7-91 M
071-010-0002	Mount a Night Vision Sight AN/PVS-4 on an M249-Machine Gun	TM 9-1005-201-10 FM 23-14	U	SA	1-4	7-91 M
071-010-0003	Dismount a Night Vision Sight AN/PVS-4 from an M249 Machine Gun	TM 9-1005-201-10 FM 23-14	U	SA	1-4	7-91 M
071-010-0007	Engage Targets with an M249 Machine Gun Using a Night Vision Sight AN/PVS-4	TM 9-1005-201-10 FM 23-14	U	SA	1-4	7-91 M
071-312-4026	Perform a Function Check on an M249 Machine Gun	TM 9-1005-201-10 FM 23-14	O	Q	1-4	7-91 M
071-312-4028	Unload an M249 Machine Gun	TM 9-1005-201-10 FM 23-14	O	Q	1-4	7-91 M
071-312-4029	Correct Malfunctions an M249 Machine Gun	TM 9-1005-201-10 FM 23-14	O	Q	1-4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 7 - M249 MACHINE GUN, BASIC TASKS (Continued)						
071-312-4032	Prepare a Range Card for an M249 Machine Gun	TM 9-1005-201-10 FM 23-14	U	Q	1-4	7-91 M
SUBJECT AREA 8 - M203 GRENADE LAUNCHER, BASIC TASKS						
071-032-0006	Construct Field Expedient Firing Aids for an M203 Grenade Launcher	FMs 21-75, 23-31	U	SA	1-4	7-91 M
071-311-2103	Zero an M203 Grenade Launcher	FM 23-31	O	SA	1-4	7-91 M
071-311-2125	Maintain an M203 Grenade Launcher	FM 23-31	O	SA	1-4	7-91 M
071-315-2351	Zero a Night Vision Sight AN/PVS-4 to an M203 Grenade Launcher	TM 11-5855-213-10	O	SA	1-4	7-91 M
071-315-2352	Engage Targets with an M203 Grenade Launcher Using a Night Vision Sight AN/PVS-4	TM 11-5855-213-10	O	SA	1-4	7-91 M
071-032-0001	Mount a Night Vision Sight AN/PVS-4 on an M203 Grenade Launcher	TM 11-5855-213-10	O	SA	1-4	7-91 M
071-032-0002	Dismount a Night Vision Sight AN/PVS-4 from an M203 Grenade Launcher	TM 11-5855-213-10	O	SA	1-4	7-91 M
071-311-2126	Perform a Function Check on an M203 Grenade Launcher	TM 11-5855-213-10 FM 23-31	O	SA	1-4	7-91 M
071-311-2127	Load an M203 Grenade Launcher	TM 11-5855-213-10 FM 23-31	O	SA	1-4	7-91 M
071-311-2128	Unload an M203 Grenade Launcher	TM 11-5855-213-10 FM 23-31	O	SA	1-4	7-91 M
071-311-2129	Correct Malfunction of an M203 Grenade Launcher	TM 11-5855-213-10 FM 23-31	O	SA	1-4	7-91 M
SUBJECT AREA 9-- M136 LAUNCHER (AT4), BASIC TASKS						
071-054-0001	Prepare an M136 Launcher for Firing	TM 9-1340-886-14	O	SA	1-4	7-91 M/D
071-054-0002	Restore an M136 Launcher to Carrying Configuration	TM 9-1340-886-14	O	SA	1-4	7-91 M/D
071-054-0003	Perform Misfire Procedures on an M136 Launcher	TM 9-1340-886-14	O	SA	1-4	7-91 M/D
071-054-0004	Engage Targets with an M136 Launcher	TM 9-1340-886-14	O	SA	1-4	7-91 M/D
SUBJECT AREA 10 -- HMMWV (HIGH-MOBILITY MULTIPURPOSE WHEELED VEHICLE)						
551-721-1342	Maintain the Cooling System on an M998-Series Vehicle	TM 9-2320-280-10	U	SA	1-2	7-91 M
551-721-1344	Maintain the Transmission System on an M998-Series Vehicle	TM 9-2320-280-10	U	SA	1-2	7-91 M
551-721-1345	Start an M998-Series Vehicle Using Auxiliary Power	TM 9-2320-280-10	U	SA	1-2	7-91 M
551-721-1346	Drive an M998-Series Vehicle	TM 9-2320-280-10	U	SA	1-2	7-91 M
551-721-1347	Maintain the Air Cleaner System on an M998-Series Vehicle	TM 9-2320-280-10	U	SA	1-2	7-91 M
551-721-1348	Maintain the Steering System on an M998-Series Vehicle	TM 9-2320-280-10	U	SA	1-2	7-91 M
551-721-1349	Maintain the Engine System on an M998-Series Vehicle	TM 9-2320-280-10	U	SA	1-2	7-91 M
551-721-1350	Maintain the Brake System on an M998-Series Vehicle	TM 9-2320-280-10	U	SA	1-2	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND:	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 10 -- HMMWV (HIGH-MOBILITY MULTIPURPOSE WHEELED VEHICLE) (Continued)						
551-721-1351	Maintain the Battery System on an M998-Series Vehicle	TM 9-2320-280-10	U	SA	1-2	7-91 M
SUBJECT AREA 11-- M9 PISTOL, BASIC TASKS						
071-004-0001	Maintain an M9 Pistol	TM 9-1005-317-10 FM 23-35	O	SA	1-2	7-91 M
071-004-0002	Perform a Function Check an M9 Pistol	TM 9-1005-317-10 FM 23-35	O	SA	1-2	7-91 M
071-004-0003	Load an M9 Pistol	TM 9-1005-317-10 FM 23-35	O	SA	1-2	7-91 M
071-004-0004	Unload an M9 Pistol	TM 9-1005-317-10 FM 23-35	O	SA	1-2	7-91 M
071-004-0005	Correct Malfunctions of an M9 Pistol	TM 9-1005-317-10 FM 23-35	O	SA	1-2	7-91 M
071-004-0006	Engage Targets with an M9 Pistol	TM 9-1005-317-10 FM 23-35	O	SA	1-2	7-91 M
SUBJECT AREA 12-- M60 MACHINE GUN, BASIC TASKS						
071-312-3003	Lay an M60 Machine Gun Using Field Expedients	FM 23-67	U	SA	1-2	7-91 M
071-312-3004	Construct a Fighting Position for an M60 Machine Gun	FMs 7-7, 7-7J	U	SA	1-2	7-91 M
071-315-0008	Engage Targets with an M60 Machine Gun Using a Night Vision Sight AN/PVS-4	FM 23-67, TM 11-5855-213-10	U	SA	1-2	7-91 M
071-315-2313	Zero a Night Vision Sight AN/PVS-4 to an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-312-3007	Prepare a Range Card for an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-312-3025	Maintain an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-312-3030	Zero an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-020-0001	Mount a Night Vision Sight AN/PVS-4 on an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-020-0002	Dismount a Night Vision Sight AN/PVS-4 from an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-020-0003	Mount an M60 Machine Gun on a Vehicle	FM 23-67	U	SA	1-2	7-91 M
071-020-0004	Dismount an M60 Machine Gun from a Vehicle	FM 23-67	U	SA	1-2	7-91 M
071-020-0006	Mount an M60 Machine Gun on an M122 Tripod	FM 23-67	U	SA	1-2	7-91 M
071-020-0007	Dismount an M60 Machine Gun from an M122 Tripod	FM 23-67	U	SA	1-2	7-91 M
071-312-3026	Perform Function Check on an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-312-3027	Load an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-312-3028	Unload an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-312-3028	Correct Malfunctions of an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
071-312-3031	Engage Targets with an M60 Machine Gun	FM 23-67	U	SA	1-2	7-91 M
SUBJECT AREA 13 -- CALIBER .50 M2 MACHINE GUN, BASIC TASKS						
071-022-0001	Maintain a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 13 -- CALIBER .50 M2 MACHINE GUN, BASIC TASKS (Continued)						
071-022-0003	Load a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M
071-022-0004	Unload a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M
071-022-0005	Correct Malfunction of a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M
071-022-0008	Mount a Night Vision Sight AN/TVS-5 on a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	U	QT	1-2	7-91 M
071-022-0009	Dismount a Night Vision Sight AN/TVS-5 from a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	U	QT	1-2	7-91 M
071-022-0010	Mount a Caliber .50 M2 Machine Gun on an M3 Tripod	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M
071-022-0011	Dismount a Caliber .50 M2 Machine Gun from an M3 Tripod	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M
071-022-0012	Mount a Caliber .50 M2 Machine Gun on a Vehicle	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M
071-022-0013	Dismount a Caliber .50 M2 Machine Gun from a Vehicle	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M
071-022-0014	Construct a Fighting Position for a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	O	QT	1-2	7-91 M
071-022-0015	Prepare a Range Card for a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	U	QT	1-2	7-91 M
071-313-3452	Zero a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	U	QT	1-2	7-91 M
071-313-3454	Engage Targets with a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	U	QT	1-2	7-91 M
071-313-3455	Set Headspace and Timing on a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	U	QT	1-2	7-91 M
071-315-0056	Engage Targets with a Caliber .50 M2 Machine Gun Using a Night Vision Sight AN/TVS-5	FM 23-65, FM 31-70, TM 9-1005-213-10	U	QT	1-2	7-91 M
071-315-2317	Zero a Night Vision Sight AN/TVS-5 to a Caliber .50 M2 Machine Gun	FM 23-65, FM 31-70, TM 9-1005-213-10	U	QT	1-2	7-91 M
SUBJECT AREA 14 -- HAND GRENADES, MINES, DEMOLITIONS, BASIC TASKS						
051-192-1003	Install the M16A1 Antipersonnel Mine	FM 5-34, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
051-192-1021	Location Mines by Visual Means	FM 5-34, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
051-192-1104	Remove the M16A1 Antipersonnel Mine	FM 5-34, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
051-192-1117	Install the M21 Antitank Mine	FM 5-34, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
051-192-1118	Remove the M21 Antitank Mine	FM 5-34, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
051-193-1025	Neutralize Mines	FM 5-34, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
051-192-1135	Locate Mines by Probing	FM 20-32	U	SA	1-4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND:	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 14 -- HAND GRENADES, MINES, DEMOLITIONS, BASIC TASKS (Continued)						
071-098-0001	Recover a Mechanical Ambush	FM 23-25	O	QT	1-4	7-91 M
071-098-0002	Install a Mechanical Ambush	FM 5-34, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
071-325-4401	Perform Safety Checks on Hand Grenades	FM 5-34, STP 21-1-SMCT, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
071-325-4407	Employ Hand Grenades	FM 5-34, STP 21-1-SMCT, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
071-325-4425	Employ an M18A1 Claymore Mine	FM 5-34, STP 21-1-SMCT, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
071-325-4426	Recover an M18A1 Claymore Mine	FM 5-34, STP 21-1-SMCT, TM 9-1345-203-12&P	O	SA	1-4	7-91 M
SUBJECT AREA 15 -- INDIVIDUAL TECHNIQUES, BASIC TASKS						
071-317-0000	Prepare an Antiarmor Range Card	FM 23-34	O	SA	1-4	7-91 M
071-326-0550	Prepare Positions for Individual and Crew-Served Weapons During MOUT	FMs 90-10, 90-10-1	O	SA	1-4	7-91 M
441-091-1102	Engage Hostile Aircraft with Small Arms	FM 44-8	U	SA	1-4	7-91 M
101-515-1900	Perform Mortuary Affairs Operations	STP 21-1-SMCT	U	A	1-4	7-91 M
SUBJECT AREA 16 -- TOW, GENERAL						
071-056-0004	Maintain an M220-Series Launcher System	FM 23-34	U	SA	1-4	7-91 M
071-056-0007	Load an M220-Series Launcher System	FM 23-34	O	SA	1-4	7-91 M
071-056-0008	Unload an M220-Series Launcher System	FM 23-34	O	SA	1-4	7-91 M
071-056-0009	Engage Targets with an M220-Series Launcher System	FM 23-34	O	SA	1-4	7-91 M/D
071-056-0010	Perform Immediate Action for an M220-Series Launcher System	FM 23-34	O	SA	1-4	7-91 M/D
071-056-0005	Conduct a System Checkout on an M220A1 Launcher System	FM 23-34	O	SA	1-4	7-91 M/D
071-056-0013	Conduct a System Checkout on an M220A2 Launcher System	FM 23-34	O	SA	1-4	7-91 M/D
071-056-0006	Perform a Preoperational Inspection of an M220 Launcher System and Encased Missile	FM 23-34	O	SA	1-4	7-91 M/D
071-056-0011	Collimate an AN/TAS-4-Series Night Sight to an M220 Launcher System Daysight	FM 23-34	O	SA	1-4	7-91 M/D
071-056-0020	Load a Dual Launcher While Mounted on an M901 Vehicle	FM 7-8-Drill	U	SA	1-4	7-91 M/D
071-056-0021	Unload a Dual Launcher While Mounted on an M901 Vehicle	FM 7-8-Drill	U	SA	1-4	7-91 M/D
071-056-0061	Stow M220 Encased Missiles in a Missile Storage Rack	FM 7-8-Drill TM 9-1425-472-12	U	SA	1-4	7-91 M/D
071-214-0001	Maintain the Turret on an M901 Vehicle	FM 7-8-Drill TM 9-1425-472-12	U	SA	1-4	7-91M/D

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 16 -- TOW, GENERAL (Continued)						
071-214-0002	Operate the Turret on an M901 Vehicle	FM 7-8-Drill TM 9-1425-472-12	U	SA	1-4	7-91M/D
SUBJECT AREA 17 -- MK 19						
071-030-0001	Maintain a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0002	Prepare a Range Card for a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0003	Zero a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	U	SA	1-4	7-91M/D
071-030-0004	Engage Targets with a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	U	SA	1-4	7-91M/D
071-030-0005	Load a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0006	Unload a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0007	Perform a Function Check on a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0008	Correct Malfunction of a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	U	SA	1-4	7-91M/D
071-030-0009	Mount a MK 19 Machine Gun on a Vehicle	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0011	Mount a MK 19 Machine Gun on an M3 Tripod	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0010	Dismount a MK 19 Machine Gun from a Vehicle	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0012	Dismount a MK 19 Machine Gun from an M3 Tripod	FM 23-27 TM 9-1010-230-10	O	SA	1-4	7-91M/D
071-030-0013	Construct a Fighting Position for a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	U	SA	1-4	7-91M/D
071-030-0016	Mount a Night Vision Sight AN/TVS-5 on a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	U	SA	1-4	7-91M/D
071-030-0017	Dismount a Night Vision Sight AN/TVS-5 from a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	U	SA	1-4	7-91M/D
071-030-0018	Zero a Night Vision Sight AN/TVS-5 to a MK 19 Machine Gun	FM 23-27 TM 9-1010-230-10	U	SA	1-4	7-91M/D
071-030-0019	Engage Targets with a MK 19 Machine Gun Using a Night Vision Sight AN/TVS-5	FM 23-27 TM 9-1010-230-10	U	SA	1-4	7-91M/D
SUBJECT AREA 18 -- SMOKE, GRENADE LAUNCHER						
071-034-0001	Load an M243 or M259 Smoke Grenade Launcher	FM 23-34	U	SA	1-4	7-91M/D
071-034-0002	Unload an M243 or M259 Smoke Grenade Launcher	FM 23-34	U	SA	1-4	7-91M/D
071-034-0003	Perform Misfire Procedures on an M243 or M259 Smoke Grenade Launcher	FM 23-34	U	SA	1-4	7-91M/D
071-034-0004	Fire an M243 or M259 Smoke Grenade Launcher	FM 23-34	U	SA	1-4	7-91M/D
071-034-0007	Maintain an M243 or M259 Smoke Grenade Launcher	FM 23-34	U	SA	1-4	7-91M/D

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND:		TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 19 -- M72A2 LAW						
071-318-2202	Engage Targets with an M72A2/A3 Light Antitank Weapon	STP 21-1-SMCT	U	SA	1-4	7-91M/D
071-318-2203	Perform Misfire Procedures on an M72A2/A3 Light Antitank Weapon	STP 21-1-SMCT	U	SA	1-4	7-91M/D
071-318-2210	Prepare an M72A2/A3 Light Antitank Weapon for Firing	STP 21-1-SMCT	U	SA	1-4	7-91M/D
071-318-2211	Restore an M72A2/A3 Light Antitank Weapon to Carrying Configuration	STP 21-1-SMCT	U	SA	1-4	7-91M/D
SUBJECT AREA 20 -- VEHICLES, GENERAL						
071-200-0002	Tow a Tracked Vehicle	STP 21-1-SMCT	U	SA	1-4	7-91M/D
071-212-0001	Maintain the Air Cleaner System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0002	Maintain the Electrical System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0003	Maintain the Brake System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0004	Maintain the Cooling System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
SUBJECT AREA 21 -- M113 SERIES ARMORED PERSONNEL CARRIER						
071-212-0005	Maintain the Engine on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0006	Maintain the Fuel System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0007	Maintain the Steering System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0008	Maintain the Transmission System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0009	Maintain the Personnel Heater on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0010	Maintain the Fire Suppression System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0011	Maintain the Exhaust System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0012	Maintain the Bilge System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0013	Maintain the Hydraulic System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0014	Maintain the Track and Suspension System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0015	Maintain the Hull on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0016	Prepare an M113-Series Vehicle for Water Operation	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0017	Maintain the Gas Particulate System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0018	Operate the Gas Particulate System on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 21 – M113 SERIES ARMORED PERSONNEL CARRIER (Continued)						
071-212-0019	Operate the M19 Periscope on an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0020	Start an M113-Series Vehicle Using Auxiliary Power	TM 9-2350-277-10	U	Q	1-2	7-91M/D
071-212-0021	Drive an M113-Series Vehicle	TM 9-2350-277-10	U	Q	1-2	7-91M/D
SUBJECT AREA 22 -- MOVE, MOUT						
071-326-0550	Prepare Position for Individual and Crew-Served Weapons During MOUT	FMs 90-10, 90-10-1	O	Q	1-4	7-91M/D
SUBJECT AREA 22 -- MOVE, BASIC TACTICS						
071-326-0502	Move Under Direct Fire	FM 21-75, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-326-0503	Move Over, Through, or Around Obstacles (Except Minefields)	FM 21-75, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-326-0510	React to Indirect Fire While Dismounted	FM 21-75, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-326-0511	React to Flares	FM 21-75, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-326-0512	Estimate Range	FM 21-75, STP 21-1-SMCT	U	Q	1-2	7-91M/D
071-326-0513	Select Temporary Fighting Position	FM 21-75, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-326-5703	Construct Individual Fighting Position	FM 21-75, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-331-0852	Clear a Field of Fire	FM 21-75, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-410-0001	Perform Self-Extraction from a Minefield	FM 21-75, STP 21-1-SMCT	O	Q	1-2	7-91M/D
SUBJECT AREA 24 -- NAVIGATE, GENERAL/MAP/COMPASS						
071-329-1005	Determine a Location on the Ground by Terrain Association	FM 21-26, STP 21-1-SMCT	U	Q	1-2	7-91M/D
071-329-1006	Navigate from One Point on the Ground to Another Point While Dismounted	FM 21-26, STP 21-1-SMCT	U	Q	1-2	7-91M/D
071-329-1018	Determine Direction Without a Compass	FM 21-26, STP 21-1-SMCT	U	Q	1-2	7-91M/D
071-329-1000	Identify Topographic Symbols on a Military Map	FM 21-26, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-329-1001	Identify Terrain Features on a Map	FM 21-26, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-329-1002	Determine the Grid Coordinates of a Point on a Map	FM 21-26, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-329-1008	Measure Distance on a Map	FM 21-26, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-329-1009	Convert Azimuths	FM 21-26, STP 21-1-SMCT	U	Q	1-2	7-91M/D
071-329-1012	Orient a Map on the Ground by Map Terrain Association	FM 21-26, STP 21-1-SMCT	U	Q	1-2	7-91M/D

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND:	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 24 -- NAVIGATE, GENERAL/MAP/COMPASS (Continued)						
071-510-0002	Compute Back Azimuths	FM 21-26, STP 21-1-SMCT	U	Q	1-2	7-91M/D
071-329-1003	Determine a Magnetic Azimuth Using a Lensatic Compass	FM 21-26, STP 21-1-SMCT	O	Q	1-2	7-91M/D
071-329-1011	Orient a Map Using a Lensatic Compass	FM 21-26, STP 21-1-SMCT	O	Q	1-2	7-91M/D
SUBJECT AREA 25 -- SUSTAIN, GENERAL						
051-191-1362	Camouflage Equipment	FM 21-75, STP 7-11H-SM	U	Q	1-2	7-91M/D
051-191-1501	Perform Individual Camouflage	FM 21-75, STP 7-11H-SM	U	Q	1-2	7-91M/D
071-600-0001	Destroy Supplies and Equipment	FM 23-34	U	A	1-2	7-91M/D
081-831-1000	Evaluate a Casualty	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1003	Clear an Object from the Throat of a Conscious Casualty	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1005	Prevent Shock	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1007	Give First Aid for Burns	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1008	Give First Aid for Head Injuries	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1009	Give First Aid for Frostbite	FM 21-11, STP 21-1-SMCT	U	A	1-4	7-91M/D
081-831-1016	Put on a Field or Pressure Dressing	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1017	Put on a Tourniquet	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1025	Apply a Dressing to an Open Abdominal Wound	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1026	Apply a Dressing to an Open Chest Wound	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1030	Administer Never Agent Antidote to Self (Self-Aid)	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1031	Administer First Aid to a Nerve Agent Casualty (Buddy-Aid)	FM 21-11, STP 21-1-SMCT	U	SA	1-2	7-91M/D
081-831-1033	Apply a Dressing to an Open Head Wound	FM 21-11, STP 21-1-SMCT	U	SA	1-2	7-91M/D
081-831-1034	Splint a Suspected Fracture	FM 21-11, STP 21-1-SMCT	U	SA	1-2	7-91M/D
081-831-1040	Transport a Casualty Using a One-Man Carry	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1041	Transport a Casualty Using a Two-Man Carry or an Improvised Litter	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
081-831-1042	Perform Mouth-to-Mouth Resuscitation	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND:	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 1 (CONTINUED)						
SUBJECT AREA 25 -- SUSTAIN, GENERAL (Continued)						
081-831-1043	Practice Preventive Medicine	FM 21-11, STP 21-1-SMCT	O	SA	1-2	7-91M/D
181-906-1505	Conduct Combat Operations According to the Law of War	FM 27-10, STP 21-1-SMCT	U	A	1-4	7-91M/D
191-377-5250	Handle Enemy Personnel and Equipment	FM 27-10, STP 21-1-SMCT	O	Q	1-2	7-91M/D
SKILL LEVEL 2						
SUBJECT AREA 26 -- COMMUNICATIONS, BASIC TASKS						
113-573-4003	Encode and Decode Messages Using KTC 600(*) Operating System	SOI, KTC 600(*)	U	SA	1-4	7-91 M
113-573-4006	Use the KTC 1400(*) Numerical Cipher/Authentication System	SOI Supplemental Instructions KTC 1400(*)	U	SA	1-4	7-91 M
SUBJECT AREA 27 -- BASIC INDIVIDUAL TECHNIQUES, BASIC TASKS						
071-326-0608	Use Visual Signaling Techniques While Mounted	FM 21-60	U	SA	2-4	7-91 M
061-283-1002	Location a Target by Grid Coordinates	STP 21-24- SMCT	P	SA	1-4	7-91 M
061-283-6003	Adjust Indirect Fire	STP 21-24- SMCT	P	Q	1-4	7-91 M
071-326-5606	React to Indirect Fire While Mounted	FM 7-91-Drill	B	SA	1-4	7-91 M
071-410-0002	React to Direct Fire While Mounted	FM 7-91-Drill	B	SA	1-4	7-91 M
071-410-0016	Conduct Occupation of an Overwatch Position	FMs 7-8, 7-91	B	SA	1-4	7-91 M
071-326-5606	Select an Overwatch Position	FMs 7-8, 7-91	B	QT	2-4	7-91 M
071-326-3001	Direct a Driver Over a Terrain Route	FMs 7-7, 7-7J, 7-8, 7-70	U	SA	2-4	7-91 M
071-334-4001	Guide a Helicopter to Landing Point	FMs 7-7, 7-8, 7-70, 57-38	U	SA	2-4	7-91 M
071-410-0019	Control Organic Fires	FMs 7-7, 7-8, 7-70, 23-14	B	QT	2-4	7-91 M
071-710-0004	Supervise Use of Night Vision Devices	FMs 7-70, 23-34	U	SA	2-4	7-91 M
SUBJECT AREA 28 -- LAND NAVIGATION, BASIC TASKS						
071-329-1030	Navigate from One Point on the Ground to Another Point While Dismounted	FMs 21-26, 90-3	P	SA	2-4	7-91 M
071-326-0515	Select a Movement Route Using a Map	FMs 21-26, 90-3	P	QT	2-4	7-91 M
071-329-1004	Determine the Elevation of a Point on the Ground Using a Map	FMs 21-26, 90-3	P	SA	2-4	7-91 M
071-329-1014	Locate an Unknown Point on a Map and on the Ground by Intersection	FMs 21-26, 90-3	P	SA	2-4	7-91 M
071-329-1015	Locate an Unknown Point on a Map and on the Ground by Resection	FMs 21-26, 90-3	P	SA	2-4	7-91 M
071-329-1019	Use a Map Overlay	FMs 21-26, 90-3	U	QT	2-4	7-91 M
071-510-0001	Determine Azimuths Using a Protractor	FMs 21-26, 90-3	P	SA	2-4	7-91 M
SUBJECT AREA 29 -- NBC, BASIC TASKS						
031-503-2008	Use and Maintain M8/M8A1 Chemical Agent Alarm	FM 3-3	U	SA	2-4	7-91 M
031-503-2001	Use M256 or M256A1 Chemical Agent Detector Kit	FM 3-3	U	QT	2-4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND:	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 2 (CONTINUED)						
SUBJECT AREA 29 -- NBC, BASIC TASKS (Continued)						
031-503-2004	Prepare and Submit NBC 4 Reports	FM 3-3	P	QT	2-4	7-91 M
031-503-2012	Supervise the Fitting of Protective Masks	FM 3-3	P	QT	2-4	7-91 M
031-503-2013	Use and Perform Operator Maintenance on the IM-74-Series Radiacmeter	FM 3-3	U	SA	2-4	7-91 M
031-503-2020	Use and Perform Operator Maintenance on the IM93 or IM147 Dosimeter and PP1578-Series Charger	FM 3-3	U	SA	2-4	7-91 M
031-503-2022	Use and Maintain the AN/VDR-2 Radiac Set	FM 3-3	U	SA	2-4	7-91 M
SUBJECT AREA 30 -- RECONNAISSANCE AND SECURITY, BASIC TASKS						
071-331-1000	Prepare a Platoon Early Warning System AN/TRS-2 for Operation	TM 11-5895-1047-10	U	QT	2-4	7-91 M
071-331-1002	Monitor a Platoon Early Warning System AN/TRS-2	TM 11-5895-1047-10	U	QT	2-4	7-91 M
061-283-1950	Prepare the Laser Range Finder (LR) AN/GVS-5 for Operation	TM 11 5860-210-10	U	SA	2-4	7-91 M
061-283-1952	Operate the Laser Range Finder (LR) AN/GVS-5	TM 11-5860-210-10	U	SA	2-4	7-91 M
061-283-1954	Perform PMCS on a Laser Rangefinder (LR) AN/GVS-5	TM 11-5860-210-10	U	SA	2-4	7-91 M
071-720-0009	Conduct Local Security Patrol	FM 7-8 FM 7-91-Drill	U	SA	2-4	7-91 M
301-348-6001	Protect Classified Information and Material	FM 19-30	U	SA	2-4	7-91 M
441-091-1040	Vision Identify Threat Aircraft	FM 44-30	U	SA	2-4	7-91 M
SUBJECT AREA 31 -- BASIC TACTICS, BASIC TASKS						
071-326-5502	Issue a Fragmentary Order	FMs 7-7, 7-7J, 7-8, 7-70	B	QT	2-4	7-91 M
071-326-5503	Issue a Warning Order	FMs 7-7, 7-7J, 7-8, 7-70	B	QT	2-4	7-91 M
061-283-1004	Locate a Target by Shift from a Known Point	FM 6-30	B	MO	2-4	7-91 M
SUBJECT AREA 32 -- SUSTAIN, GENERAL						
071-600-0005	Enforce Preventive Medicine	FM 21-11	B	MO	2-4	7-91 M
081-831-0101	Request Medical Evacuation	FM 21-11	U	SA	2-4	7-91 M
121-030-3534	Report Casualties	FM 21-11	B	SA	2-4	7-91 M
SUBJECT AREA 33 -- MINES, BASIC TASKS						
051-192-1119	Install US Antihandling Devices on AT Mines	FM 5-25	U	SA	2-4	7-91 M
051-192-1120	Remove US Antihandling Devices on AT Mines	FM 5-25	U	SA	2-4	7-91 M
051-193-1003	Prime Explosives Nonelectrically	FM 5-25	U	SA	2-4	7-91 M
051-193-1004	Construct an Electric Initiating/Detonating Assembly	FM 5-25	U	SA	2-4	7-91 M
051-193-1005	Prime Explosives Electrically	FM 5-25	U	SA	2-4	7-91 M
051-193-1007	Prime Explosives with Detonating Cord	FM 5-25	U	SA	2-4	7-91 M
051-193-1011	Install Dual Firing Systems	FM 5-25	U	SA	2-4	7-91 M
051-193-1013	Neutralize Booby Traps	FMs 5-25, 20-32	U	SA	2-4	7-91 M
051-192-2030	Clear a Misfire	FM 5-25	U	SA	2-4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 2 (CONTINUED)						
SUBJECT AREA 34 -- TOW, GENERAL						
071-056-0024	Conduct Preparation of a Dismounted M220-Series Launcher System Firing Position	FM 23-34	O/B	QT	2-4	7-91 M
071-056-0025	Conduct Preparation of a Mounted M220-Series Launcher System Firing Position	FM 23-34	O/B	QT	2-4	7-91 M
071-056-0030	Determine M220-Series Launcher System Firing Limitations	FM 23-34	O/B	QT	2-4	7-91 M
071-056-0059	Select M220 Launcher System Firing Position	FM 23-34	O/B	QT	2-4	7-91 M
071-056-0060	Conduct Placement of a Dismounted M220 Launcher System into Action	FM 23-34	O/B	QT	2-4	7-91 M
SUBJECT AREA 35 -- M966 VEHICLE						
071-056-0032	Conduct Mounting of an M220 Launcher System on an M966 Vehicle	FM 23-34	O/B	QT	2-4	7-91 M
071-056-0034	Conduct Dismounting of an M220 Launcher System on an M966 Vehicle	FM 23-34	O/B	QT	2-4	7-91 M
071-056-0035	Conduct Occupation of an M220 Launcher System Firing Position	FM 23-34	O/B	QT	2-4	7-91 M
SUBJECT AREA 36 -- M901-SERIES VEHICLE						
071-056-0041	Conduct Mounting of an M220 Launcher System on an M901 Vehicle	FM 23-34	U	QT	2-4	7-91 M
071-056-0045	Conduct Dismounting of an M220A2 Launcher System from an M901 Vehicle	FM 23-34	U	QT	2-4	7-91 M
071-316-2537	Operate the Squad Leader's Periscope on an M901 Vehicle	FM 23-34	U	QT	2-4	7-91 M
SKILL LEVEL 3						
SUBJECT AREA 30 -- BASIC TACTICS						
071-400-0001	Adjust Aerial Fire Support	FMs 5-105, 7-8	B	QT	3-4	7-91 M
071-334-4002	Establish a Helicopter Landing Point	FM 7-8, STP 21-24-SMCT	U	QT	3-4	7-91 M
SUBJECT AREA 31 -- SUSTAIN: NBC						
031-503-3002	Conduct Unmasking Procedures	FM 3-4, TC 3-4-1	B,U	QT	3-4	7-91 M
031-503-3004	Supervise the Crossing of a Contaminated Area	FMs 3-4, 3-3, 3-5, STP 21-24-SMCT	B,U	QT	3-4	7-91 M
031-503-3005	Prepare and Submit NBC 1 Reports	FMs 3-4, 3-3, 3-5, STP 21-24-SMCT	B,U	QT	3-4	7-91 M
031-503-3006	Supervise Radiation Monitoring	FMs 3-4, 3-3, 3-5, STP 21-24-SMCT	B,U	QT	3-4	7-91 M
031-503-3007	Direct Preparation for NBC Attack	FMs 3-4, 3-3, 3-5, STP 21-24-SMCT	B,U	QT	3-4	7-91 M
031-503-3008	Implement Mission-Oriented Protective Posture	FMs 3-4, 3-3, 3-5, STP 21-24-SMCT	B,U	QT	3-4	7-91 M
031-503-3009	Lead MOPP Gear Exchange	FMs 3-4, 3-3, 3-5, STP 21-24-SMCT	B,U	QT	3-4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND:	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 3 (CONTINUED)						
SUBJECT AREA 32 -- BASIC TACTICS, BASIC TASKS						
071-316-2603	Supervise Construction and Camouflage of a TOW Dismounted Fighting Position	FM 23-34	U	QT	3-4	7-91 M
051-195-3005	Direct Construction of Non-Explosive Antivehicular Obstacles	FM 5-102 STP 21-24-SMCT	U	SA	3-4	7-91 M
071-326-5505	Issue an Oral Operation Order	FMs 7-7, 7-7J, 7-8, 7-70	B	QT	3-4	7-91 M
071-316-2651	Recommend Employment of M220-Series Launcher Systems	FMs 7-91, 23-34	B	QT	3-4	7-91 M
071-331-1003	Installation Planning and Installation of the Platoon Early Warning System	TM 11-5895-1047-10		QT	3-4	7-91 M
071-326-3049	Conduct Troop-Leading Procedures for an Operation	FMs 7-7, 7-8, 7-70	B	QT	3-4	7-91 M
071-326-5705	Establish an Observation Post	FM 21-75, FM 7-8 STP 21-24-SMCT	B,U	QT	3-4	7-91 M
071-730-0011	Establish a Checkpoint	FM 7-7, FM 7-8	B,U	QT	3-4	7-91 M
071-730-0006	Enforce Operations Security	AR 530-1, STP 21-24-SMCT	B,U	QT	3-4	7-91 M
071-730-0007	Conduct Employment of Field-Expedient and Pyrotechnic Early Warning Devices	FMs 5-25, 5-34	B,U	QT	3-4	7-91 M
071-730-0010	Establish a Roadblock	FMs 5-102, 5-34	B,U	QT	3-4	7-91 M
113-572-6005	Write a United States Message Text Format (USMTF) Message	DA PAM 25-7 STP 21-24-SMCT	U	SA	3-4	7-91 M
SUBJECT AREA 33 -- BASIC TACTICS, TOW TASKS						
071-316-4056	Prepare a Sector Sketch for an M220 Antiarmor Section	FMs 7-91, 23-34	U	QT	3-4	7-91 M
071-056-0056	Conduct Movement Techniques by an M220 Antiarmor Section	FMs 7-91, 23-34	B	QT	3-4	7-91 M/D
071-331-0030	Analyze Terrain	STP 21-24-SMCT	U	MO	3-4	7-91 M
071-410-0017	Conduct Reconnaissance for an M220 Antiarmor Support Mission	FMs 23-34, 7-8	U	MO	3-4	7-91 M
071-450-0041	Conduct a Point Ambush	FM 7-8	U	MO	3-4	7-91 M
071-450-0042	Conduct a Point Antiarmor Ambush	FM 7-8	U	MO	3-4	7-91 M
101-521-4051	Request Supplies and Logistical Services	DA Pam 710-2-1	U	SA	3-4	7-91 M
441-091-3001	Direct Unit Air Defense	FMs 44-63, 44-81	B,U	SA	3-4	7-91 M
071-316-2538	Charge a Battery Using a PP-7382/TAS Battery Charge	STP-7-11H1-4	U	MO	3-4	7-91 M
SKILL LEVEL 4						
SUBJECT AREA 34 -- NBC, BASIC TASKS						
031-503-4002	Plan for and Supervise the Positioning of an Automatic Chemical Agent Alarm System Setup	FM 3-3, TM 3-6665-225-12	U	SA	4	7-91 M
071-620-0002	Employ NBC Defense Teams	FMs 3-3, 3-4, 3-19, 21-40	U	SA	4	7-91 M
031-450-4003	Control Unit Radiation Exposure	FM 3-4 STP 21-24-SMCT	U	SA	4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P = Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 4 (CONTINUED)						
SUBJECT AREA 34 -- NBC, BASIC TASKS (Continued)						
071-620-0001	Plan for Decontamination Operations	FMs 3-4, 3-3, 3-5	U	SA	4	7-91 M
071-620-0002	Employ NBC Defense Teams	FMs 3-4, 3-3, 3-5	U	SA	4	7-91 M
SUBJECT AREA 35 -- BASIC TACTICS, BASIC TASKS						
071-098-0004	Conduct the Breach of a Minefield	FMs 7-7, 7-8, 7-70	U	SA	4	7-91 M
051-192-3032	Direct Installation/Removal of a Hasty Protective Mine Field	FMs 7-7, 7-8, 7-70	A	SA	4	7-91 M
071-326-5770	Prepare a Platoon Sector Sketch	FMs 7-7, 7-8, 7-70, STP 21-24-SMCT	A	QT	4	7-91 M
071-410-0012	Supervise Occupation of an Assembly Area	FMs 7-7, 7-8, 7-70	A	SA	4	7-91 M
071-056-0057	Conduct Movement Techniques by an M220 Antiarmor Platoon	FMs 23 34, 7-8	U	QT	4	7-91 M
071-326-3013	Conduct a Tactical Road March	FMs 7-7, 7-8, STP 21-24-SMCT	U	SA	4	7-91 M
071-326-5775	Coordinate with an Adjacent Platoon	FMs 7-7, 7-8, STP 21-24-SMCT	U	SA	4	7-91 M
071-410-0013	Prepare a Situation Report	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-410-0020	Plan for Use of Supporting Fires	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-420-0001	Consolidate a Platoon Following Enemy Contact While in the Offense	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-420-0002	Reorganize a Platoon Following Enemy Contact While in Offense	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-430-0006	Conduct a Defense by a Platoon	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-430-0007	Consolidate a Platoon Following Enemy Contract While in the Defense	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-430-0008	Reorganize a Platoon Following Enemy Contact While in the Defense	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-440-0009	Conduct a Defense by a Platoon During MOUT	FMs 90-10, 90-10-1	U	SA	4	7-91 M
071-450-0005	Conduct a Screen by a Platoon	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-450-0027	Conduct a Relief	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-450-0030	Conduct a Passage of Lines	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-450-0037	Direct Employment of Smoke	FMs 7-7, 7-8, 7-91	U	SA	4	7-91 M
071-450-0039	Conduct an Area Ambush by an M220 Antiarmor Platoon	FMs 7-7, 7-8, 7-91	A,U	SA	4	7-91 M
071-450-0040	Conduct an Antiarmor Area Ambush by an M220 Antiarmor Platoon	FMs 7-7, 7-8, 7-91	A,U	SA	4	7-91 M
071-600-0011	Coordinate Casualty and Vehicle Evacuation	FMs 7-7, 7-8, 7-91	A,U	QT	4	7-91 M
301-337-6001	Process Captured Materiel	FMs 34-52, 34-54, STP 21-24-SMCT	U	QT	4	7-91 M
071-710-0006	Plan Use of Night Vision Devices	FMs 7-7, 7-8, 7-91	U	QT	4	7-91 M
071-326-5805	Conduct a Route Reconnaissance Mission	FMs 7-7, 7-8, 5-36, STP 21-24-SMCT	A,U	QT	4	7-91 M
071-720-0012	Conduct a Zone Reconnaissance by a Platoon	FMs 7-7, 7-8, 5-36, 7-91	A,U	QT	4	7-91 M
071-710-0015	Conduct a Area Reconnaissance by a Platoon	FMs 7-7, 7-8, 5-36, 7-91	A,U	QT	4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CRITICAL TASK NO	LEGEND: A = Advanced NCO Course (ANCOC) B = Basic NCO Course (BNCOC) P =Primary Leadership Development Course (PLDC) O = One-Station Unit Training (OSUT) U = Training in the Unit	AN = Annually MO = Monthly QT = Quarterly SA = Semiannually D = Drill M = MTP M/D = MTP/Drill	TNG LOC	SUST TNG FREQ	SUST TNG SL	ARTEP MTP (M) OR DRILL (D)
	CRITICAL TASK TITLE	REFERENCES				
SKILL LEVEL 4 (CONTINUED)						
SUBJECT AREA 35-- BASIC TACTICS, BASIC TASKS (Continued)						
551-721-3359	Prepare a Strip Map	FMs 21-18, 21-305, 55-30, STP 21-24-SMCT	A,U	QT	4	7-91 M
071-940-0002	Conduct Resupply of a Platoon	FMs 7-7, 7-8, DA PAM 710-2-1	A,U	QT	4	7-91 M
SUBJECT AREA 36--BASIC TACTICS						
071-316-2800	Manage an M220-Series Launcher System Battery Program	None	O, U	SA	4	7-91 M
071-056-0059	Select M220-Series Launcher System Firing Positions	FM 23-34	U, A	SA	4	7-91 M
071-600-0009	Coordinate with Supported Units	FMs 7-7, 7-70	A	SA	4	7-91 M

Table 2-4. Critical tasks by subject areas (continued).

CHAPTER 3

MOS SKILL LEVEL TASKS

This chapter consists of a list of basic (11BCHM) tasks, organized by skill level and subject area (Section I) followed by 11H task summaries, also organized by skill level and subject area (Sections II through V).

Section I. LIST OF BASIC (11BCHM) TASKS

Personnel within the 11H MOS are responsible for the tasks in this MOS-specific manual and for the following tasks, which are located in *STP 7-11BCHM1-SM* and *STP 7-11BCHM24-SM-TG*.

3-1. SKILL LEVEL 1

- a. **Subject Area 1: Weapons General.**
 - 071-317-0000 Prepare an Antiarmor Range Card
- b. **Subject Area 3: M9 Pistol.**
 - 071-004-0001 Maintain an M9 Pistol
 - 071-004-0002 Perform a Function Check on an M9 Pistol
 - 071-004-0003 Load an M9 Pistol
 - 071-004-0006 Engage Targets with an M9 Pistol
 - 071-004-0005 Correct Malfunctions of an M9 Pistol
 - 071-004-0004 Unload an M9 Pistol
- c. **Subject Area 4: M16A1/A2 Rifle.**
 - 071-311-2006 Construct Field-Expedient Firing Aids for an M16A1 or M16A2 Rifle
 - 071-315-2307 Zero a Night Vision Sight AN/PVS-4 to an M16A1 or M16A2 Rifle
 - 071-315-2308 Engage Targets with an M16A1 or M16A2 Rifle Using a Night Vision Sight AN/PVS-4
- d. **Subject Area 5: M249 Machine Gun.**
 - 071-312-4025 Maintain an M249 Machine Gun
 - 071-312-4026 Perform a Function Check on an M249 Machine Gun
 - 071-312-4004 Lay an M249 Machine Gun Using Field Expedients
 - 071-312-4027 Load an M249 Machine Gun
 - 071-312-4030 Zero an M249 Machine Gun
 - 071-010-0006 Engage Targets with an M249 Machine Gun
- e. **Subject Area 6: M60 Machine Gun.**
 - 071-312-3004 Construct a Fighting Position for an M60 Machine Gun
 - 071-312-3030 Zero an M60 Machine Gun
 - 071-315-2313 Zero a Night Vision Sight AN/PVS-4 to an M60 Machine Gun
 - 071-315-0008 Engage Targets with an M60 Machine Gun Using a NightVision Sight AN/PVS-4

- f. **Subject Area 7: Caliber .50 M2 Machine Gun.**
 - 071-022-0001 Maintain a Caliber .50 M2 Machine Gun
- g. **Subject Area 8: MK 19 Machine Gun.**
 - 071-030-0001 Maintain a MK 19 Machine Gun
 - 071-030-0011 Mount a MK 19 Machine Gun on an M3 Tripod
 - 071-030-0007 Perform a Function Check on a MK 19 Machine Gun
 - 071-030-0012 Dismount a MK 19 Machine Gun from an M3 Tripod
 - 071-030-0010 Dismount a MK 19 Machine Gun from a Vehicle
- h. **Subject Area 9: M203 Grenade Launcher.**
 - 071-311-2125 Maintain an M203 Grenade Launcher
 - 071-032-0006 Construct Field-Expedient Firing Aids for an M203 Grenade Launcher
 - 071-311-2103 Zero an M203 Grenade Launcher
 - 071-315-2351 Zero a Night Vision Sight AN/PVS-4 to an M203 Grenade Launcher
 - 071-315-2352 Engage Targets with an M203 Grenade Launcher Using a Night Vision Sight AN/PVS-4
- i. **Subject Area 10: M47 Medium Antitank Weapon.**
 - 071-052-0003 Construct a Fighting Position for an M47 Medium Antitank Weapon
 - 071-317-3302 Prepare an M47 Medium Antitank Weapon for Firing
 - 071-052-0005 Operate a Night Vision Sight AN/TAS-5
 - 071-052-0006 Engage Targets with an M47 Medium Antitank Weapon
 - 071-317-3306 Perform Misfire Procedures on an M47 Medium Antitank Weapon
 - 071-052-0004 Restore an M47 Medium Antitank Weapon to Carrying Configuration
- j. **Subject Area 11: M136 Launcher.**
 - 071-054-0001 Prepare an M136 Launcher for Firing
 - 071-054-0004 Engage Targets with an M136 Launcher
 - 071-054-0003 Perform Misfire Procedures on an M136 Launcher
 - 071-054-0002 Restore an M136 Launcher to Carrying Configuration
- k. **Subject Area 12: Mines.**
 - 051-192-1021 Locate Mines by Visual Means
 - 051-193-1025 Neutralize Mines
 - 071-098-0002 Install a Mechanical Ambush
 - 071-098-0001 Recover a Mechanical Ambush
- l. **Subject Area 13: Basic Tactics.**
 - 071-326-0501 Move as a Member of a Fire Team
 - 071-326-0512 Estimate Range
 - 071-410-0001 Perform Self-Extraction from a Minefield
- m. **Subject Area 14: MOUT.**
 - 071-326-0557 Select Hasty Firing Positions During MOUT
 - 071-326-0550 Prepare Positions for Individual and Crew-Served Weapons During MOUT
 - 071-326-0541 Perform Movement Techniques During MOUT

- n. **Subject Area 15: Sustain General.**
 - 081-831-1043 Practice Preventive Medicine
- o. **Subject Area 16: NBC.**
 - 031-503-1021 Mark NBC Contaminated Area
 - 031-503-1022 Decontaminate Equipment Using M13 Decontaminating Apparatus, Portable
 - 031-503-2022 Decontaminate Equipment Using the ABC M11 Decontaminating Apparatus
- p. **Subject Area 17: Night Vision Devices.**
 - 071-710-0009 Maintain Night Vision Goggles AN/PVS-7
 - 071-710-0008 Operate Night Vision Goggles AN/PVS-7
 - 071-315-0003 Operate Night Vision Sight AN/PVS-4
 - 071-315-0030 Operate Night Vision Goggles AN/PVS-5
 - 071-315-0091 Operate a Thermal Viewer AN/PAS-7
- q. **Subject Area 18: OPSEC and COMSEC.**
 - 071-730-0012 Identify Combat Vehicles
 - 071-730-0013 Identify Weapons
 - 071-730-0008 Employ Field-Expedient Early Warning Devices
- r. **Subject Area 19: Radio.**
 - 113-587-1064 Prepare SINCGARS (Manpack) for Operation
 - 113-587-2070 Operate Secure SINCGARS Single Channel (SC)
 - 113-587-2071 Operate Secure SINCGARS Frequency Hopping (FH) (Net Members)
 - 113-573-4006 Use the KTC 1400(*) Numerical Cipher/Authentication System
 - 113-573-4003 Encode and Decode Messages Using KTC 600(*) Tactical Operations Code
- s. **Subject Area 20: Communications.**
 - 071-820-0001 Operate Telephone Set TA-1/PT
 - 071-820-0002 Install Telephone Set TA-1/PT
 - 113-600-2007 Operate Telephone Set TA-312/PT
 - 113-588-1087 Install Hot Loop
- t. **Subject Area 21: Caliber .50 M2 Machine Gun.**
 - 071-022-0003 Load a Caliber .50 M2 Machine Gun
 - 071-022-0004 Unload a Caliber .50 M2 Machine Gun
 - 071-022-0005 Correct Malfunctions of a Caliber .50 M2 Machine Gun
 - 071-313-3454 Engage Targets With a Caliber .50 M2 Machine Gun
 - 071-313-3455 Set Headspace and Timing on a Caliber .50 M2 Machine Gun
- u. **Subject Area 22: MK 19 Machine Gun.**
 - 071-030-0003 Zero an MK 19 Machine Gun
 - 071-030-0004 Engage Targets With an MK 19 Machine Gun
 - 071-030-0005 Load an MK 19 Machine Gun
 - 071-030-0006 Unload an MK 19 Machine Gun
 - 071-030-0008 Correct Malfunctions of an MK 19 Machine Gun

- 071-030-0016 Mount a Night Vision Sight AN/TVS-5 on a MK 19 Machine Gun
- 071-030-0017 Dismount a Night Vision Sight AN/TVS-5 from a MK 19 Machine Gun

3-2. SKILL LEVEL 2

- a. **Subject Area 23: M47 Medium Antitank Weapon.**
 - 071-317-3324 Select a Fighting Position for an M47 Medium Antitank Weapon
- b. **Subject Area 24: Mines and Demolitions.**
 - 051-193-1003 Prime Explosives Nonelectrically
 - 051-193-2030 Clear a Misfire
 - 051-192-2030 Install and Operate the Modular Pack Mine System
 - 051-192-2031 Operate the Remote Control Unit for the Modular Pack Mine System
- c. **Subject Area 25: Basic Tactics.**
 - 061-283-1004 Locate a Target by Shift from a Known Point
 - 071-326-5605 Control Movement of a Fire Team
 - 071-326-5606 Select an Overwatch Position
 - 071-410-0019 Control Organic Fires
- d. **Subject Area 26: Navigate.**
 - 071-329-1030 Navigate from One Point on the Ground to Another Point While Mounted
- e. **Subject Area 27: NBC.**
 - 031-503-2008 Use and Maintain an M8/M8A1 Chemical Agent Alarm
- f. **Subject Area 28: Night Vision Devices.**
 - 071-710-0004 Control Use of Night Vision Devices
- g. **Subject Area 29: OPSEC and COMSEC.**
 - 071-331-1000 Prepare a Platoon Early Warning System AN/TRS-2 for Operation
 - 071-331-1002 Monitor a Platoon Early Warning System AN/TRS-2
- h. **Subject Area 30: Signals.**
 - 071-334-4001 Guide a Helicopter to a Landing Point

3-3. SKILL LEVEL 3

- a. **Subject Area 31: Basic Tactics.**
 - 071-326-3001 Direct a Driver over a Terrain Route
 - 071-326-5611 Conduct the Maneuver of a Squad
 - 071-410-0010 Conduct a Leader's Reconnaissance
- b. **Subject Area 32: Signals.**
 - 071-326-0608 Use Visual Signaling Techniques
- c. **Subject Area 33: Operations.**
 - 071-326-5502 Issue a Fragmentary Order
 - 071-326-5503 Issue a Warning Order
 - 071-326-5505 Issue an Oral Operation Order

3-4. SKILL LEVEL 4

- a. **Subject Area 34: Mines and Demolitions.**
 - 051-192-3032 Direct Installation/Removal of a Hasty Protective Minefield
- b. **Subject Area 35: Basic Tactics.**
 - 071-334-4002 Establish a Helicopter Landing Point
 - 071-410-0012 Conduct Occupation of an Assembly Area
 - 071-410-0020 Plan for Use of Supporting Fires
- c. **Subject Area 36: Move Offense.**
 - 071-420-0005 Conduct the Maneuver of a Platoon
- d. **Subject Area 37: Move Defense.**
 - 071-326-5832 Conduct a Disengagement by a Platoon while Under Enemy Pressure
- e. **Subject Area 38: MOUT.**
 - 071-440-0009 Conduct a Defense by a Platoon during MOUT
 - 071-440-0012 Conduct an Attack by a Platoon During MOUT
- f. **Subject Area 39: Specialized Missions.**
 - 071-450-0005 Conduct a Screen by a Platoon
- g. **Subject Area 40: NBC.**
 - 071-620-0002 Employ NBC Defense Teams
- h. **Subject Area 41: Patrolling.**
 - 071-720-0012 Conduct a Zone Reconnaissance by a Platoon
- i. **Subject Area 42: OPSEC and COMSEC.**
 - 071-730-0004 Plan Installation of a Platoon Early Warning System AN/TRS-2
- j. **Subject Area 43: Command and Staff General.**
 - 071-332-5031 Prepare Road Movement Table
- k. **Subject Area 44: Command and Staff Information.**
 - 071-332-5034 Extract Information from Route Reconnaissance Report

Section II. 11H10 TASKS

TOW GENERAL TASKS

MAINTAIN AN M220 LAUNCHER SYSTEM 071-056-0004

CONDITIONS

Given the components of an M220A1 or M220A2 launcher system; a scrub brush; denatured alcohol solvent; wiping rags; spill kit; approved hazardous waste accumulation containers; rubber gloves; goggles; detergent; glycerol; an orangewood stick; a camel hair brush; lens paper; rubber syringe; deicer; cotton pads; lens-cleaning solution; clean water; sandpaper; masking tape; primer; green polyurethane paint No. 383; black polyurethane paint No. 37039; desiccant pad (M220A1 only); and *TM 9-1425-450-12* for an M220A2.

STANDARDS

Inspect components IAW Table 2-1, preventive maintenance checks and services (PMCS), from the technical manual. Use correct cleaning materials and techniques to remove all foreign matter from components. Use correct painting materials and techniques to spot paint components. Perform system checkout procedures to determine if the launcher system is operational. Correct all deficiencies the operator has the authority to correct. Report all other deficiencies to the supervisor.

TRAINING AND EVALUATION

Training Information Outline

Perform PMCS and system checkout procedures when you first receive a component; before, during, and after operation; and daily, when using the launcher system daily. Perform system checkout procedures before and after installing the launcher on a vehicle. When the launcher is in storage, perform checkout procedures weekly. Inspect each component IAW the PMCS outlined in Section III, paragraph 2-14, Table 2-1 of *TM 9-1425-450-12* for an M220A2.

NOTE: Leave each component on the launcher system while you perform PMCS.

1. Remove all spills and dispose of hazardous waste IAW the unit or installation SOP or OPORD.
2. Perform cleaning procedures IAW Section III, paragraphs 2-15 through 2-21 in *TM 9-1425-450-12* for an M220A2.
3. Spot paint as needed IAW procedures in Section III, paragraph 2-23 of *TM 9-1425-450-12* for an M220A2.
4. Perform system checkout procedures IAW Section III, paragraph 2-23 of *TM 9-1425-450-12* (M220A2).
5. Correct all the deficiencies that the operator has the authority to correct.
6. Report all other deficiencies to the supervisor.

EVALUATION PREPARATION

Setup: Provide the soldier with all the equipment listed in the conditions statement.

Brief Soldier: Tell the soldier to maintain an M220 launcher system IAW Section III of the appropriate technical manual.

EVALUATION GUIDE

Performance Measures	Results	
1. Inspect each component IAW the appropriate PMCS table.	P	F
2. Clean, decontaminate, contain, label, and transport components using correct materials and techniques.	P	F

EVALUATION GUIDE

Performance Measures	Results	
3. Spot paint components using correct painting materials and techniques.	P	F
4. Perform system checkout procedures.	P	F
5. Correct all the deficiencies that the operator has the authority to correct.	P	F
6. Report all other deficiencies to the supervisor.	P	F
7. Select and wear appropriate PPE.	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required	Related
TM 9-1425-450-12 (for an M220A2)	None

ENVIRONMENTAL REFERENCES

Required
AR 200-1
TC 5-400

**PERFORM A SYSTEM SELF-TEST ON AN
M220A1 LAUNCHER SYSTEM
071-056-0005**

CONDITIONS

Given an assembled tripod-mounted or vehicle-mounted M220A1 launcher system.

STANDARDS

Perform a system self-test to determine if the launcher system functions properly. Boresight the daysight to the missile guidance set. Correct all deficiencies the operator has the authority to correct. Report all other deficiencies to the supervisor.

**TRAINING AND EVALUATION
Training Information Outline**

1. Perform a system self-test--
 - a. Before and after installing the launcher system on a vehicle.
 - b. Daily, once the system is in use.
 - c. After changing any electrical component.
 - d. Whenever any of the following occur:
 - The launcher system has been moved over rough terrain.
 - The temperature rises or falls 10 degrees Fahrenheit.
 - The launcher system has operated continuously for more than 4 hours.
 - The launcher is moved to a new location using the extended travel mode.
 - The tripod-mounted launcher is moved to a new operating site.

WARNING

If an encased missile is loaded, ensure that the arming lever is lowered to the safe position.

CAUTION

Perform the system self-test as quickly as possible. If performing the test takes too long, the battery assembly may not have enough power to fire missiles.

2. On the missile guidance set, turn the SELF-TEST switch to position 1.
 - a. Lift the cover over the test/operate switch.
 - b. Push the TEST/OPERATE switch to the TEST position and hold it.

NOTE: Save time and prevent excessive wear on the TEST/OPERATE switch:

1. Set it to the TEST position and hold it continuously until you complete the system self-test.
 2. Repeat the test after you remove and replace any component.
 3. Check to ensure that the needles in the azimuth and elevation meters read between the in-band marks.
 - c. If the needles do not read between the in-band marks, remove and replace the battery assembly (tag the battery assembly for recharging). Repeat the self-test.
 - d. If the needles still do not read between the in-band marks, remove and replace the missile guidance set.
3. Check to ensure the azimuth and elevation meter lights work. If they do not work, you need do nothing about that at this time.
4. Set the SELF-TEST switch to position 2. Check to ensure the needles in the azimuth and elevation meters read between in-band marks. If not, remove and replace the missile guidance set.
5. Unlock the elevation lock on the traversing unit.
- a. Move the launch tube up and down. Check to ensure that--
 - When the launch tube moves up, the elevation meter needle moves right.
 - When the launch tube moves down, the elevation meter needle moves left.
 - b. Lock the elevation lock and move the launch tube down until it locks in the 8-degree down position.
 - c. If the elevation needle does not move with the launch tube, remove and replace the traversing unit. Repeat the self-test.
 - d. If the needles still do not move with the launch tube, remove and replace the missile guidance set.
6. Unlock the azimuth lock on the traversing unit. Turn the launch right, left, and back to center.
- a. Check to ensure that the azimuth meter needle moves right and left with the launch tube. Lock the azimuth lock and turn the launch tube until it locks in the forward position.
 - b. If the azimuth needle does not move with the launch tube, remove and replace the traversing unit. Repeat the self-test.
 - c. If the needles still do not move with the launch tube, remove and replace the missile guidance set.
7. Set the SELF-TEST switch to position 3.
- a. Check to ensure the needles in the azimuth and elevation meters read between in-band marks.
 - b. If the needles do not read between in-band marks, remove and replace the missile guidance set.

8. Set the SELF-TEST switch to position 4.
 - a. Check to ensure the needles in the azimuth and elevation meters read between in-band marks.
 - b. If the needles do not read between in-band marks, remove and replace the missile guidance set.
 9. Set the SELF-TEST switch to position 5.
 - a. Check to ensure that the needles in the azimuth and elevation meters read between in-band marks between 12 seconds.
 - b. If the needles do not read between in-band marks, remove and replace the missile guidance set.
- NOTE:** You must hold the TEST/OPERATE switch in the TEST position while you move the SELF-TEST switch from position 4 to position 5. When you do so--
1. The azimuth meter needle will read to the extreme left. However, after 8 to 10 seconds, it should move between the in-band marks.
 2. Likewise, the elevation meter needle will read to the extreme left, then move between the in-band marks, back to the extreme left, then back between the in-band marks.
10. Set the SELF-TEST switch to position 6.
 - a. Check to ensure that the needles in the azimuth and elevation meters read between the in-band marks.
 - b. If the needles do not read between in-band marks, remove and replace the missile guidance set.
 11. On the daysight, set the FOCUS control to +3 or greater.
 12. Set the SELF-TEST switch to position 7.
 - a. Check to ensure the daysight motor is running.
 - b. If you cannot hear the motor, remove and replace the daysight.
 - c. Check to ensure that the azimuth and elevation meter needles read at the center of in-band area.
 - d. If the azimuth and elevation meter needles do not read at the center of the in-band area, adjust the boresight. To adjust the boresight--
 - (1) Open the boresight adjustment knob covers.
 - (2) Turn the azimuth boresight adjustment knob to center needle in azimuth meter.
 - (3) Turn the elevation boresight adjustment knob to center needle in elevation meter.
 - (4) Close the boresight adjustment knob covers.
 - (5) If, after several adjustments, the azimuth or elevation meter needles do not center, release the TEST/OPERATE switch, set the boresight adjustment knobs to about center, and then repeat the self-test. If they still do not center, remove and replace the daysight tracker. Repeat the self-test. If you still cannot center the needles, remove and replace the missile guidance set.

NOTE: Whenever you adjust the boresight, you must also collimate the nightsight to the daysight. Refer to task number 071-056-0011, Collimate an AN/TAS-4 Series Nightsight to an M220 Launcher System Optical Sight.

13. Release the TEST/OPERATE switch, then close the cover.
14. Set SELF-TEST switch to the unmarked position (do not repeat self-test position 1).
15. Report to your supervisor all deficiencies the operator has no authority to correct.

EVALUATION PREPARATION

Setup: Provide the soldier with all the equipment listed in the conditions statement. Change the azimuth and elevation boresight-adjustment knobs to ensure that the soldier will adjust the boresight.

Brief Soldier: Tell the soldier to perform a system self-test to determine if the launcher system functions properly. Have the soldier boresight the daysight to the missile guidance set. Correct all deficiencies the operator has the authority to correct. Report all other deficiencies to the supervisor.

EVALUATION GUIDE

Performance Measures	Results	
1. Check SELF-TEST position 1 for in-band reading.	P	F
2. Check to ensure that the azimuth and elevation meter lights work.	P	F
3. Check SELF-TEST position 2 for in-band reading.	P	F
4. Check to ensure that the elevation meter needle moved to the right when the launch tube moved up, and that the needle moved to the left when the launch tube moved down.	P	F
5. Check to ensure that the azimuth meter needle moved right and left with the launch tube.	P	F
6. Check SELF-TEST position 3 for the in-band reading.	P	F
7. Check SELF-TEST position 4 for the in-band reading.	P	F

EVALUATION GUIDE

Performance Measures	Results	
8. Check SELF-TEST position 5 for the in-band reading within 12 seconds.	P	F
9. Check SELF-TEST position 6 for the in-band reading.	P	F
10. Set the daysight focus control to +3 or greater.	P	F
11. Check SELF-TEST position 7 to determine whether the daysight motor is running.	P	F
12. Check SELF-TEST position 7 for azimuth and elevation needles reading center of in-band area.	P	F
13. Adjust the boresight (as needed).	P	F
14. Correct all deficiencies the operator has the authority to correct.	P	F
15. Report all other deficiencies to the supervisor.	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required	Related
None	None

PERFORM A PREOPERATIONAL INSPECTION OF AN M220 LAUNCHER SYSTEM AND ENCASED MISSILE 071-056-0006

CONDITIONS

Given an assembled tripod-mounted or vehicle-mounted M220A1 or M220A2 launcher system and an encased missile.

STANDARDS

Perform a preoperational inspection of the launcher system to ensure that the battery assembly, lights, trigger, bridge clamp, and launch tube are operational and free of all foreign matter. Correct all deficiencies the operator has the authority to correct. Report all other deficiencies to the supervisor. Perform a preoperational inspection of the encased missile to ensure that it remains free of all foreign matter, undamaged, and safe to fire. Report all deficiencies to the supervisor.

TRAINING AND EVALUATION Training Information Outline

1. Perform preoperational inspection before installation of the launcher system on a vehicle; inspect daily, once the system is in use; and, if time is available, inspect after changing operating sites (tripod-mounted system only).

WARNING

Ensure the launcher does not contain an encased missile before you conduct a preoperational inspection. The missile could fire during the inspection. This could injure you or someone else.

2. Perform preoperational inspection of an M220 launcher system.
 - a. Inspect missile guidance set for battery.
 - (1) M220A1. Set the SELF-TEST switch to position 1. Lift the cover over the TEST/OPERATE switch. Push the TEST/OPERATE switch to the TEST/OPERATE position and hold it there. Check to ensure the needles in the azimuth and elevation meters read between the in-band marks and that the meter lights are on. However, if the needles read between in-band marks and the lights are not on, then move to the next step. Release the TEST/OPERATE/OPERATE switch and close the cover. If the needles do not read between the in-band marks, remove the battery assembly, tag it for recharging, and replace it. Repeat the self-test. If the needles still do not read between the in-band marks, remove and replace the missile guidance set.

(2) M220A2. Lift the cover over the TEST/OPERATE switch. Push the switch to the TEST/OPERATE position and hold it there. Check to ensure that all the lamps on the display light up and remain lit for 3 seconds. Release the TEST/OPERATE switch and close the cover. Remove and replace the battery assembly (tag battery assembly for recharging) if the lamps do not light up. Repeat the self-test. If the lamps still do not light up or remain lit for 3 seconds, remove and replace the missile guidance set.

b. Inspect the daysight reticle light by setting the focus control to -0+. Set the reticle light switch to ON. While looking into the eyepiece, adjust the focus control for sharp crosshairs. Check to ensure that the reticle light came on. During daylight, you may have to shield the daysight lens to see if it is ON. If so, turn the reticle light switch to OFF. If the reticle light remains unlit, remove and replace the daysight.

c. Lift the trigger cover and inspect the trigger. Press the trigger in and release it. You should hear a click when you press the trigger. You should hear another click when you release the trigger. Also, the trigger should spring back when released. Close the trigger cover. If you do not hear a click when you press or release the trigger, or if the trigger does not spring back when you release it, remove and replace the traversing unit.

d. Inspect the bridge clamp. Unlock and raise the bridge clamp-locking handle, then open the bridge clamp itself. Check the clamp to ensure it unlocks and opens without binding. Check to ensure the electrical connector is free of foreign matter and completely inside the bridge clamp. Lower the bridge clamp, and then lower the locking handle. Slowly raise, then lower the locking handle. You should hear a click when you raise it and again when you lower it. Raise the arming lever to the armed position. Check to ensure the electrical connector extends about 1 inch. Lower the arming lever. For any deficiencies you cannot correct, remove and replace the traversing unit.

e. Inspect the launch tube to ensure that it is securely attached to the trunnion of the traversing unit by the launch tube bracket or indexing lugs and launch tube latch/catch. Check to ensure that the breech and inside of the launch tube are free of dirt, missile wire, and foreign matter. Also, check to ensure that the inside of the launch tube is free of splits, cracks, gouges, tears, pits, visible raised areas, and exposed fabric or threads. For any deficiencies you cannot correct, remove and replace the traversing unit.

f. Report all uncorrected deficiencies to the supervisor.

3. Perform a preoperational inspection of an encased missile.

a. Inspect the outside of the encased missile for oil, dirt, grease, dents, gouges, punctures, and cracks. Remove any oil, dirt, or grease.

WARNING

If the missile case is punctured or damaged in such a way that the missile inside may be damaged, treat the missile as hazardous material and notify EOD personnel.

b. Inspect the rear diaphragm to ensure that it remains intact (not ruptured) and that the humidity indicator is blue.

CAUTION

Do not break the rear diaphragm. Water can damage the missile if it gets into the missile case.

- c. Inspect the protective cover on the electrical connector to ensure it is present and seated on the electrical connector.
- d. Inspect the forward handling ring and quick release clamp to ensure they are present and secured.
- e. Inspect the indexing lugs to ensure they sustained no damage.
- f. Report all deficiencies to the supervisor.

EVALUATION PREPARATION

Setup: Provide the soldier with all the equipment listed in the conditions statement. For training, use a missile simulation round (MSR) instead of an encased missile.

Brief Soldier: Tell the soldier to perform a preoperational inspection of an M220 launcher system and to ensure that the battery assembly, lights, trigger, bridge clamp, and launch tube are operational and free of all foreign matter. Have him perform a preoperational inspection of an encased missile to ensure that it is free of all foreign matter, is not damaged, and is safe to fire. Tell him to correct all of the deficiencies that operators have the authority to correct. Have him report all other deficiencies to the supervisor.

EVALUATION GUIDE**Performance Measures****Results**

- | | | |
|--|---|---|
| 1. Perform preoperational inspection of an M220 launcher system. | P | F |
| a. Inspect missile guidance set for battery. | | |
| b. Inspect daysight reticle light. | | |
| c. Inspect trigger. | | |
| d. Inspect bridge clamp. | | |
| e. Inspect launch tube. | | |
| f. Correct all deficiencies the operator has the authority to correct. | | |
| g. Report all other deficiencies to the supervisor. | | |
| 2. Perform preoperational inspection of an encased missile. | P | F |
| a. Inspect outside of encased missile. | | |
| b. Inspect rear diaphragm and humidity indicator. | | |
| c. Inspect electrical connector protective cover. | | |
| d. Inspect forward handling ring and quick release clamp. | | |
| e. Inspect indexing lugs. | | |
| f. Report deficiencies to the supervisor. | | |

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required

None

Related

TM 9-1425-450-12

LOAD AN M220 LAUNCHER

071-056-0007

CONDITIONS

Given an assembled tripod mounted M220A1 or M220A2 launcher system, encased missile, and a gunner to help you.

STANDARDS

Load the encased missile so that it seats in the launch tube with the bridge clamp lowered and the locking handle in the locked position. Check the backblast area and raise the arming lever to the armed position.

TRAINING AND EVALUATION

Training Information Outline

1. Check to ensure that the gunner has closed the trigger cover and locked the launcher in the forward, 8-degree down position.
2. Raise the bridge clamp-locking handle and open the bridge clamp.
3. Inspect the encased missile to ensure there are no dents, gouges, punctures, or cracks in the missile case.

WARNING

If the missile case has a puncture or if you see evidence of any kind of damage that might mean the missile inside could also have damage, then treat the missile as hazardous material and notify EOD personnel.

4. Inspect the rear diaphragm to ensure that it remains intact (not ruptured) and that the humidity indicator is blue.

CAUTION

Do not break the rear diaphragm. If water gets into the launch case, it may damage the missile.

WARNING

If the humidity indicator is pink--

- **In a training situation, DO NOT fire the missile.**
- **In a combat situation, load and try to fire it only if you cannot find any other missiles.**

5. Remove the protective cover from the electrical connector.
 - a. Turn the ring in the center of the protective cover two complete turns counterclockwise, then turn the cover itself clockwise to remove the cover from the electrical connector.
 - b. Make sure that the rubber O-ring stayed inside the cover and that remains unattached to the electrical connector.
 - c. Save the protective cover to re-use if you do not fire the missile.
6. Inspect the indexing lugs to ensure they sustained no damage.
7. Remove the quick release clamp and forward handling ring.
 - a. Slightly raise the forward end of the encased missile.
 - b. Pull up on the quick release clamp at the forward handling ring and remove both from the encased missile.

CAUTION

Use care not to punch a hole in the forward diaphragm when the forward handling ring is removed.

- c. Verify that the rubber O-ring remained inside the forward handling and that it remains unattached to the forward end of the encased missile.
 - d. Lower the forward end of the encased missile.
 - e. Save the forward handling ring and quick release clamp to be used again if the missile is not fired.
8. Load the missile.
 - a. Face the missile with the nose end to your right.
 - b. Pick up the missile by sliding both hands underneath the missile, palms facing up. Cradle the missile to you and stand up. Carry the missile to the launcher.
 - c. Raise rear end of the missile about 45 degrees and, with the electrical connector facing up, insert the indexing lugs into the launch tube indexing slots. Slide the encased missile forward and down into the launch tube until the indexing lugs are seated firmly in place.
 - d. Lower the rear end of the encased missile until it seats fully in the trunnion.
 - e. Lower the bridge clamp. Push down on top of the bridge clamp with one hand, and with the other hand, lower the locking handle until it locks.

NOTE: The gunner must unlock the launcher, acquire, and identify a target before the launcher arms.

WARNING

DO NOT raise the arming lever until the gunner is ready to fire at a selected target.

9. Check the backblast area. Face to the rear of the launcher. Check left and right of the launcher to ensure there are no personnel, equipment, or flammable materials within the rear firing danger zone (75 meters out from the rear of the launcher at a 90-degree angle). When the rear firing danger zone is clear, announce "BACKBLAST AREA CLEAR."

WARNING

Before continuing with the missile-loading procedure and while it is on-going, make sure that all personnel, equipment, and flammable materials remain clear of the firing danger zone. Anyone or anything that remains in the backblast area may sustain injury or damage when the missile fires.

10. Raise the arming lever to the armed position. Look to make sure that the electrical plug on the bridge clamp connects to the receptacle on the missile.

11. Announce "ARMING LEVER UP."

EVALUATION PREPARATION

Setup: Provide the soldier with all the equipment and personnel listed in the conditions statement. Ensure the encased missile is *not* loaded in the launcher. For training, use a missile simulation round (MSR) instead of an encased missile. Do not evaluate the gunner during this task.

Brief Soldier: Tell the soldier to prepare the launcher system. Have him inspect and prepare the encased missile, then load it so that it seats in the launch tube with the bridge clamp lowered and the locking handle in the locked position. Have him check the backblast area and raise the arming lever to the armed position.

EVALUATION GUIDE

Performance Measures	Results	
1. After the gunner closes the trigger cover and locks the launcher in the forward, 8-degree down position, raise the bridge clamp-locking handle and open the bridge clamp.	P	F
2. Inspect the encased missile case for dents, gouges, punctures, or cracks.	P	F
3. Inspect the rear diaphragm and the humidity indicator.	P	F
4. Remove the protective cover from the electrical connector.	P	F
5. Inspect the indexing lugs.	P	F
6. Remove the quick release clamp and forward handling ring.	P	F
7. Load the encased missile.	P	F
8. Check the backblast area.	P	F
9. Announce "BACKBLAST AREA CLEAR."	P	F
10. Raise the arming lever to armed position.	P	F
11. Announce "ARMING LEVER UP."	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required
None

Related
TM 9-1425-450-12

UNLOAD AN M220 LAUNCHER

071-056-0008

CONDITIONS

Given an assembled tripod mounted M220A1 or M220A2 launcher system, empty missile case, encased missile, and a gunner to help you.

STANDARDS

Remove the empty missile case (fired missile) from the launch tube and clear the launcher. Remove the encased missile (not the fired missile) from the launch tube and prepare it for stowage.

TRAINING AND EVALUATION

Training Information Outline

1. Unload the launcher after a missile has been fired.
 - a. Check to ensure that the gunner has closed the trigger cover and locked the launcher in the forward, 8-degree down position.

NOTE: The gunner must now close the trigger cover and lock the launcher in the forward, 8-degree down position, which he must do before you can perform the next step, which is to open the bridge clamp.

- b. Raise the bridge clamp-locking handle and open the bridge clamp.

CAUTION

1. Open the bridge clamp before you lower the arming lever. Lowering the arming lever will cause the *wire-cutting mechanism* to malfunction--it will fail to cut the command-link wires. If this occurs, you will have to cut the wires manually before you can remove the empty missile case.
2. During training or support and stability operations, dispose of wire, case, and retaining rings (scrap metal) IAW SOP after firing practice rounds.

- c. Lift the back end of the missile container and remove it from the launch tube.
 - d. Dispose of the empty missile case IAW the unit SOP.
 - e. Clear the launch tube of command-link wires and any foreign matter.

WARNING

Be careful when pulling command-link wires out of the launch tube. The wires are very small and strong, and you can injure yourself if you handle them carelessly.

2. Unload the launcher when a missile has not been fired.

NOTE: You can lower the arming lever at the same time the gunner closes the trigger cover and locks the launcher in the forward, 8-degree down position. However, the gunner must close the trigger cover and lock the launcher in the forward, 8-degree down position before you can unlock and open the bridge clamp.

- a. Lower the arming lever.
- b. Ensure that the gunner has closed the trigger cover and locked the launcher in the forward, 8-degree down position.
- c. Raise the bridge clamp-locking handle and open the bridge clamp.

CAUTION

If the missile was not fired, lower the arming lever *before* you open the bridge clamp. If you do not lower the arming lever first, the wire-cutting mechanism will cut the command-link wires.

- d. Lift the back end of the encased missile and remove it from the launch tube.
- e. Replace the electrical connector protective cover, forward handling ring, and quick release clamp.
- f. Tag the missile with the date that it was initially prepared for firing.

EVALUATION PREPARATION

Setup: Provide the soldier with all equipment and personnel listed in the conditions statement. Load an encased missile or empty missile case in the launcher. For training, use a missile simulation round (MSR) instead of an encased missile or empty missile case. Do not evaluate the gunner during the performance of this task.

Brief Soldier: Tell the soldier to unload an M220 launcher system. Be sure he removes the empty (fired) missile case from the launch tube after cutting the command-link wires, disposes of it IAW unit SOP, and clears the launch tube of command-link wire and foreign matter. Also tell him remove the encased missile (not fired) from the launch tube and to replace the protective cover on the electrical connector, to replace the forward handling ring, and to replace the quick release clamp. Also, tell him to tag the missile with the date it was initially prepared for firing.

EVALUATION GUIDE

Performance Measures

Results

1. Unload the launcher after a missile has been fired.

P F

 - a. After the gunner closes the trigger cover and locks the launcher in the forward, 8-degree down position, raise the bridge clamp-locking handle and open the bridge clamp.
 - b. Remove the empty missile case from the launch tube.
 - c. Dispose of the empty missile case IAW the unit SOP.
 - d. Clear the launch tube of command-link wires and foreign matter.

2. Unload the launcher when a missile has not been fired.

P F

 - a. Lower the arming lever.
 - b. After the gunner closes the trigger cover and locks the launcher in the forward, 8-degree down position, raise the bridge clamp-locking handle and open the bridge clamp.
 - c. Remove the encased missile from the launch tube.
 - d. Replace the protective cover on the electrical connector, the forward handling ring, and quick release clamp.
 - e. Tag the missile with the date it was initially prepared for firing.

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required

None

Related

TM 9-1425-450-12

ENGAGE TARGETS WITH AN M220 LAUNCHER SYSTEM

071-056-0009

CONDITIONS

Given an assembled tripod-mounted or vehicle-mounted M220A1 or M220A2 launcher system, loaded with an encased missile and armed for firing; a sector of fire; and an engageable target within the sector of fire.

STANDARDS

Acquire, track, and fire so that the missile hits the target.

TRAINING AND EVALUATION

Training Information Outline

1. Assume a comfortable firing position. An uncomfortable position causes muscle tension, which affects your ability to track smoothly.
 - a. Look into the eyepiece of either the daysight or the nightsight, whichever gives you the better target image, depending upon battlefield visibility.

WARNING

Remove your glasses before you look through the daysight or nightsight. Do not look at the sun or bright lights through the daysight. Doing so could seriously damage your eyes. If you do receive an eye injury in this way, cover your eyes and seek medical help right away.

NOTE: For the M220A2 launcher system, the nightsight also allows the gunner to track missiles through battlefield obscurants such as dust, smoke, fog, or electronic countermeasures. To take advantage of this capability, be sure to turn on the nightsight before using the daysight to engage a target.

- b. Place both hands firmly on the control knobs.
 - c. Place your body so there is no contact between your shoulder and the encased missile. Your only contact with the launcher should be your hands and face.
 - d. When firing from the tripod, kneel on one or both knees.
2. Focus the sight selected for engagement.
 - a. **Daysight.**
 - (1) Adjust the focus control until the crosshairs are in focus.
 - (2) If needed, set the reticle light switch to ON to see the crosshairs clearly.

(3) Turn the control knobs to line up the crosshairs on the center of the target's visible mass.

(4) Move the launch tube left or right by applying a smooth, steady force to both control knobs (pushing one and pulling on the other) and rotating the body from the waist up as the launcher moves.

(5) Elevate (up) or depress (down) the launch tube by applying a smooth, twisting force to both control knobs.

b. Nightsight.

(1) Turn the diopter adjustment ring until the reticle (crosshairs) focus.

(2) Check to ensure that both the battery monitor and the NOT READY lights are off.

(3) Set the field-of-view selector switch to WFOV.

(4) Turn the control knobs to line up the crosshairs on the center of the target's visible mass.

(5) Move the launch tube left or right by applying a smooth, steady force to both control knobs (pushing one and pulling on the other) and rotating the body from the waist up as the launcher moves.

(6) Elevate (up) or depress (down) the launch tube by applying a smooth, twisting force to both control knobs.

(7) If needed, adjust range focus, contrast (CTRS), and brightness (BRT) controls to obtain the best possible sight picture of the target.

(8) Set the field-of-view selector switch to NFOV.

(9) If needed, adjust the range focus, contrast (CTRS), and brightness (BRT) controls to improve the sight picture of the target.

3. Turn the control knobs to line up the crosshairs on the center of the target's visible mass.

a. Move the launch tube left or right by applying a smooth, steady force to both control knobs (pushing one and pulling on the other) and rotating the body from the waist up as the launcher moves.

b. Elevate (up) or depress (down) the launch tube by applying a smooth, twisting force to both control knobs.

4. Track the target.

a. Raise the trigger cover.

b. Establish a smooth tracking rate while keeping the crosshairs lined up on the center of the target.

(1) Track with smooth motions. As the target moves, apply even pressure to both control knobs to move the launch tube left, right, up (elevate), or down (depress). Applying pressure to only one control knob, or uneven pressure, makes it more difficult to track smoothly.

(2) Do not make any jerky movements. Maintain the same arm position, shoulder position, and head position throughout an engagement. Any change in your body position other than leaning with the controls will cause a jerky movement. This could cause you to maneuver the missile erratically and possibly cause it to hit the ground.

(3) A target you are tracking may be obscured or hidden for a short time. Continue to track at the same rate as before you lost sight of the target. When the target reappears, it should be near the aiming point. Without jerking, turn the control knobs to realign the crosshairs on the center of the target.

(4) Do not switch from the daysight to the nightsight or vice versa after a missile has been fired.

(5) Use proper breath control throughout an engagement. Breathing improperly will cause you to track poorly. Proper breath control is especially important during the first and last 400 meters of the missile's flight.

5. Fire the missile.

WARNINGS

- 1. Wear ear plugs (V-51R or equal) when you fire missiles. If you do not wear ear plugs, and you fire a missile, you may suffer ear damage.**
- 2. Before firing a missile, ensure you lock down the bridge clamp-locking handle. If the locking handle is not locked fully, the command-link wires may be cut at firing.**
- 3. Do not fire a missile over or in the direction of electrical wires. Contact between the missile's command-link wires and a live high-voltage power line can injure personnel and damage equipment.**
- 4. Ensure the crew is out of the firing danger zone before you press the trigger. All crew members should remain in their firing positions until the missile either hits the target or explodes. When you fire the missile, you and anyone else still in the firing danger zone can be seriously injured.**

a. Take a deep breath and let part of it out.

b. Press the trigger in and release it, then resume breathing. The missile will launch after a 1.5-second delay. Be prepared for this so you do not flinch or to jerk the control knobs.

(1) Also prepare for two noises that will occur as soon as you press the trigger:

(a) The sound of the gyro activating. This is not a loud noise, but it may make you think the missile misfired. When you hear it, prepare yourself mentally for the next noise.

(b) The sound of the launch motor firing. This is a loud noise similar to the one the AT4 makes when fired.

(2) Be prepared for the backblast. Do not let the dust, smoke, heat, and debris from the backblast cause you to flinch.

c. Ignore the missile when it appears in the sight picture. Never try to guide the missile itself. If you allow it to distract you, you will track poorly and greatly reduce your chances of hitting the target.

6. Continue to track the target at a smooth tracking rate, keeping the crosshairs on the center of the target, until missile impact. Stop tracking only after missile has ended its flight.

7. Lower the trigger cover.
8. Lock the launcher in the forward, 8-degree down position.

EVALUATION PREPARATION

Setup: Provide the soldier with all the equipment and information listed in the conditions statement. To evaluate this task during training, use the Precision Gunnery Training System (PGTS) TOW Field Tactical Trainer (TFTT) or the TOW Gunnery Trainer (TGT).

Brief Soldier: Tell the soldier to acquire, track, and fire the M220 launcher system so that the missile impacts on the target.

EVALUATION GUIDE

Performance Measures	Results	
1. Assume a firing position.	P	F
2. Focus the sight you are using to engage the target.	P	F
3. Acquire the target in the sight. Center the crosshairs on the target's visible mass.	P	F
4. Establish a smooth tracking rate and, at the same time, keep the crosshairs centered on the target's visible mass.	P	F
5. Fire the missile.	P	F
6. Keep the crosshairs centered on the target's visible mass until the missile impacts.	P	F
7. Lower the trigger cover.	P	F
8. Lock the launcher in the forward, 8-degree down position.	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required	Related
None	TM 9-1425-450-12 FM 23-34

**PERFORM IMMEDIATE ACTION
FOR AN M220 LAUNCHER SYSTEM HANGFIRE/MISFIRE
071-056-0010**

CONDITIONS

Given an assembled, tripod-mounted M220A1 or M220A2 launcher system, loaded with an encased missile that has failed to launch (hangfire or misfire), and a gunner to assist you.

STANDARDS

Perform immediate action for a hangfire so that the missile fires, or remove it from the launcher and dispose of it IAW the unit SOP. Perform immediate action for a misfire so that the missile fires, or remove it from the launcher and dispose of it IAW the unit SOP.

**TRAINING AND EVALUATION
Training Information Outline**

1. If you press the trigger and the missile fails to leave the launch tube after the normal 1.5-second delay, either a hangfire or misfire condition exists.
 - a. A hangfire is an unexpected delay in the functioning of components within the missile. It may occur anywhere in the series of events, from the pressing of the trigger to the ignition of the launch motor. After you press the trigger, you will normally hear the sound of the prefire functions of the explosive squib firing ("pop") and the gyroscope spinning (whirring). When you hear these sounds, but the missile fails to launch, a *hangfire* condition exists.
 - b. A misfire is a complete failure to fire. It may be caused by improper loading procedures, a faulty firing circuit, a failure of electrical power, poor electrical connections, short circuits, or faulty components within the missile. When you do not hear the prefire functions and the missile fails to launch, a *misfire* condition exists.

WARNING

In the event of a hangfire or misfire, remember that the missile may still fire. Careful avoid any actions that could result in an injury from a delayed missile launch. Most delayed launches occur within one minute. However, some occur as much as 30 minutes after you pressed the trigger. Keep all personnel out of the forward and rear firing danger zones.

2. Perform immediate action for a hangfire.

NOTE: When the missile fails to launch, the gunner alerts the crew by announcing "HANGFIRE." then continuing to track the target for 1 more minute. If the missile still fails to launch after 1 minute, the gunner closes the trigger cover.

- a. Lower the arming lever.

NOTE: The gunner locks the launcher in the forward 8-degree down position.

- b. If you were in combat, you would proceed to the next step immediately. However, in a training situation such as this one, wait 30 minutes before proceeding to the next step.
- c. Unlock and open the bridge clamp.
- d. Remove the missile from the launch tube.
- e. Carry the missile to a dud pit. If no dud pit is located close by, place the missile on the ground at least 200 meters from the launcher.
- f. Even after you have removed the missile from the launcher, keep it pointed downrange and keep all personnel out of the forward and rear danger zones.
- g. Notify EOD personnel.
- h. Dispose of the missile IAW unit SOP.

3. Perform immediate action for a misfire.

NOTE: When the missile fails to launch, the gunner presses the trigger again. If the missile still fails to launch, the gunner will alert the crew by announcing "MISFIRE," then continuing to track the target for 1 minute.

- a. After 1 minute, perform the missile guidance set's self-test for battery strength.

(1) *M220A1*. Set the SELF-TEST switch to position 1. Lift the cover over the TEST/OPERATE switch. Push the TEST/OPERATE switch to the TEST position and hold it. Check to ensure the needles in the azimuth and elevation meters read between the in-band marks and that the meter lights are working. However, if the needles read between the in-band marks and the lights are not working, then no action is required. Release the TEST/OPERATE switch and close the cover. If the needles do not read between the in-band marks, remove and replace the battery assembly. Tag the battery assembly for recharging.

(2) *M220A2*. Lift the cover over the TEST/OPERATE switch. Push the TEST/OPERATE switch to the TEST position and hold it. Check to ensure that all the lamps on the display light up and remain lit for 3 seconds. Release the TEST/OPERATE switch and close the cover. If the lamps do not light up and remain lit for 3 seconds, remove and replace the battery assembly. Tag the battery assembly for recharging.

- b. On the missile guidance set, check to ensure that the coil cord connector remains properly attached to the connector J1. To ensure that the connector is locked in place, turn the coil cord connector locknut clockwise until tight.
- c. Check to ensure that the bridge clamp-locking handle is properly seated.
- d. Lower the arming lever.
- e. Check the backblast area to ensure that it is clear.
- f. Announce "BACKBLAST AREA CLEAR."

- g. Raise the arming lever to the armed position.
- h. Announce "ARMING LEVER UP."

NOTE: The gunner presses the trigger again. If the missile still fails to launch, the gunner will alert the crew by announcing "MISFIRE," then continuing to track the target for 1 minute. If the missile still fails to launch after 1 minute, the gunner closes the trigger cover.

- i. Lower the arming lever.

NOTE: The gunner locks the launcher in the forward 8-degrees down position.

- j. In a combat situation, proceed immediately to the next step. However, in a training situation such as this one, wait 30 minutes, then proceed to the next step.
- k. Unlock and open the bridge clamp.
- l. Remove the missile from the launch tube.
- m. Carry the missile to a dud pit. If no dud pit is located close by, place the missile on the ground at least 200 meters from the launcher.
- n. Even after you have removed the missile from the launcher, keep it pointed downrange and keep all personnel out of the forward and rear danger zones.
- o. Notify EOD personnel about the hangfire or misfire.
- p. Dispose of the missile IAW the unit SOP.

EVALUATION PREPARATION

Setup: Provide the soldier with all equipment and personnel listed in the conditions statement. For training, use a missile simulation round (MSR) instead of an encased missile. Do not evaluate the gunner during the performance of this task.

Brief Soldier: Tell the soldier to perform immediate action for an M220 launcher system hangfire so that he fires the missile or removes it from the launcher and disposes of it IAW the unit SOP. Have the soldier perform immediate action for a misfire so that he fires the missile or removes it from the launcher and disposes of it IAW the unit SOP.

EVALUATION GUIDE

Performance Measures

Results

- 1. Perform immediate action for a hangfire.
 - a. Wait 1 minute, then lower the arming lever.
 - b. Wait 30 minutes.
 - c. Unlock and open the bridge clamp.
 - d. Remove the missile from the launch tube.

P F

Performance Measures

Results

- e. Carry the missile to the dud pit, or placed it on the ground 200 meters away from the launcher.
 - f. Keep the missile pointed downrange at all times.
 - g. Notify EOD personnel.
 - h. Dispose of the missile IAW unit SOP.
2. Perform immediate action for a misfire.
- a. Wait 1 minute, then perform the missile guidance set self-test for the battery.
 - b. Check to ensure that the coil connector is properly attached to connector J1 and tightened locknut.
 - c. Check to ensure that the bridge clamp-locking handle is properly seated.
 - d. Lower the arming lever.
 - e. Check the backblast area.
 - f. Announce "BACKBLAST AREA CLEAR."
 - g. Raise the arming lever to the armed position.
 - h. Announce "ARMING LEVER UP."
 - i. Wait 1 minute, then lower the arming lever.
 - j. Wait 30 minutes.
 - k. Unlock and open the bridge clamp.
 - l. Remove the missile from the launch tube.
 - m. Carry the missile to the dud pit or place them on the ground 200 meters away from the launcher.
 - n. Keep the missile pointed down range at all times.
 - o. Notify EOD personnel.
 - p. Dispose of missile IAW unit SOP.

P F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required
None

Related
TM 9-1425-450-12

COLLIMATE AN AN/TAS-4 SERIES NIGHTSIGHT TO AN M220 LAUNCHER SYSTEM DAYSIGHT 071-056-0011

CONDITIONS

Given an assembled M220A1 or M220A2 launcher system with the daysight boresighted and the nightsight not collimated, and a boresight collimator (with battery for an M220A1 only).

STANDARDS

Align the boresight collimator and the nightsight reticles with the daysight crosshairs.

TRAINING AND EVALUATION **Training Information Outline**

CAUTION

During training or support and stability operations, dispose of wire, case, and retaining rings (scrap metal) IAW SOP after firing practice rounds.

NOTE: Before performing this task, you must first boresight the daysight . For the M220A1, refer to task number 071-056-0005, Perform a System Self-Test on an M220A1 Launcher System. For the M220A2, refer to task number 071-056-0013, Perform a System Self-Test on an M220A2 Launcher System.

1. Collimate the nightsight to the daysight whenever the following occur:
 - a. The launcher system has been moved over rough terrain.
 - b. The temperature rises or falls 10 degrees Fahrenheit.
 - c. The launcher system has operated continuously for more than 4 hours.
 - d. The launcher system has been moved to a new location using the extended travel mode.
 - e. The operating site has changed (tripod-mounted system only).
 - f. During a system self-test, the daysight azimuth and elevation boresight adjustment knobs are moved.
2. Release the two latches on the boresight collimator carrying case. Open the case and remove the boresight collimator.

WARNING

Latches on the boresight collimator carrying case snap open roughly. Be careful when opening the case so injury to fingers does not occur.

CAUTION

Be careful when handling the boresight collimator. It is a precision electro-optical instrument and can be damaged with rough handling.

3. Inspect the mating surfaces of the boresight collimator and the nightsight for any foreign matter. If necessary, clean the mating surfaces to ensure proper mating for boresight accuracy.
4. (M220A1 only) Install battery onto boresight collimator.
 - a. Remove battery from battery case.
 - b. Line up battery guide pins on boresight collimator with guide holes on battery.
 - c. Line up boresight collimator connector with battery connector.
 - d. Slide battery onto boresight collimator until it locks into place and the connectors mate.
5. Mount the collimator onto the nightsight.
 - a. Position the boresight collimator mating surfaces over the locating pins and pads of the nightsight.
 - b. Fit the boresight collimator onto the nightsight.
 - c. To lock the boresight collimator to the nightsight, push in and turn the securing latches.
6. (M220A2 only). To boresight the collimator and the nightsight, first connect the boresight collimator power cable.
 - a. Remove the boresight collimator power cable from the case.
 - b. Remove the dust covers from the ends of the boresight collimator power cable.
 - c. Connect one end of the power cable to the boresight collimator connector 3J1.
 - d. Connect the other end of the power cable to the nightsight connector J4.
7. Look into the daysight eyepiece. If needed, adjust the focus control knob for best focus of the daysight crosshairs. Check to be sure you can see the boresight collimator reticle. If you cannot, remove and replace the boresight collimator battery (M220A1) or the boresight collimator power cable (M220A2). If you still cannot see the collimator reticle, remove and replace the boresight collimator. Repeat the steps.
8. Adjust the boresight collimator azimuth (AZ) and elevation (EL) adjustment knobs to align the boresight collimator reticle with the daysight crosshairs. Accuracy is very important. The small circle of the collimator reticle should be centered on and divided into four equal parts by the daysight crosshairs. If the collimator reticle will not adjust enough to align with the daysight crosshairs.
 - a. Secure the nightsight by placing your left hand on top of it.
 - b. With your right hand, move the latch handle to the rear position to release the nightsight.

- c. Move the coarse azimuth control knob to position number 2.
- d. Move the latch handle forward to lock the nightsight into position.
- e. Ensure the nightsight is securely mounted to the daysight before you let go.
- f. Adjust the boresight collimator AZ and EL adjustment knobs to align the collimator reticle with the daysight crosshairs. If you still cannot align the boresight collimator reticle with the daysight crosshairs, then remove and replace the boresight collimator. Repeat all steps.

9. Set the nightsight field-of-view selector to NFOV.

10. Look into the nightsight eyepiece. If needed, adjust the nightsight diopter adjustment ring for the best focus of the nightsight reticle crosshairs. Adjust the nightsight BRT, CTRS, and range focus knobs until the boresight collimator reticle is sharp and clear. If you cannot see the boresight collimator reticle, remove and replace the boresight collimator battery (M220A1 only) or the boresight collimator power cable (M220A2 only). If the collimator reticle is still not visible, remove and replace the boresight collimator. Repeat all steps.

11. Move the nightsight AZ and EL boresight lock levers fully counterclockwise to unlock.

12. Adjust the nightsight AZ and EL boresight knobs to align the nightsight reticle crosshairs with the boresight collimator reticle. Accuracy is important. The nightsight reticle crosshairs should be centered on and divide the small circle of the collimator reticle into four equal parts. If the nightsight reticle will not adjust enough to align with the collimator reticle, then remount the nightsight in coarse azimuth position number 2 and repeat steps 8 through 12. If it has already been remounted in position 2, remove and replace the nightsight. Repeat all steps.

13. Move the nightsight AZ and EL boresight lock levers fully clockwise to lock.

14. Look into the nightsight eyepiece. Verify that the nightsight reticle crosshairs are still aligned with the collimator reticle. If the nightsight reticle moved, repeat Step 11 through Step 14.

15. Look into the daysight eyepiece. Verify that the collimator reticle is still aligned with the daysight crosshairs. If the collimator reticle moved, repeat steps 8 through 15.

16. Set the nightsight field-of-view selector to WFOV.

17. Look into the nightsight eyepiece. If needed, adjust the BRT and CTRS knobs for the best image of the boresight collimator reticle. Verify that the center circle of the boresight collimator reticle is less than one diameter from the center of the nightsight reticle crosshairs. If the center circle of the boresight collimator reticle has moved more than one diameter from the center of the nightsight reticle crosshairs, remove and replace the nightsight. Repeat all steps.

18. (M220A2 only) Remove the power cable from the boresight collimator and nightsight.
 - a. Remove the boresight collimator power cable from the nightsight connector J4.
 - b. Remove the boresight collimator power cable from the collimator connector 3J1.
 - c. Replace the dust covers on the ends of the power cable; place the power cable into the case.
19. Hold the boresight collimator, turn the securing latches to unlock it, and slide it off the nightsight.
20. (M220A1 only) Remove the battery from the collimator by sliding the battery down and off the collimator. Place the battery in the battery case.
21. Place the boresight collimator in the carrying case. Close the latches.

EVALUATION PREPARATION

Setup: Provide the soldier with all equipment listed in the conditions statement. Set the nightsight field-of-view selector switch to WFOV. For an M220A1, set the nightsight actuator switch to AIR/BATT/CHECK. For an M220A2, set the ON/OFF/STBY switch to ON.

Brief Soldier: Tell the soldier to inspect, prepare, and mount the boresight collimator onto the nightsight. Have the soldier adjust the azimuth and elevation knobs on the boresight collimator and nightsight so that the reticles of the collimator and nightsight align with the daysight crosshairs.

EVALUATION GUIDE

Performance Measures	Results	
1. (M220A1 only) Install the battery onto the boresight collimator.	P	F
2. Inspect the mating surfaces of the collimator and the nightsight.	P	F
3. Mount the collimator onto the nightsight.	P	F
4. (M220A2 only) Connect the boresight collimator power cable.	P	F
5. Align the boresight collimator reticle with the daysight's crosshairs.	P	F
6. Set the nightsight field-of-view selector to NFOV.	P	F
7. Unlock the nightsight AZ and EL boresight lock levers.	P	F

Performance Measures**Results**

8. Align the nightsight reticle crosshairs with the boresight collimator reticle.	P	F
9. Lock the nightsight AZ and EL boresight lock levers.	P	F
10. Verify that the nightsight reticle crosshairs align with the boresight collimator reticle.	P	F
11. Verify that the boresight collimator reticle aligns with the daysight's crosshairs.	P	F
12. Set the nightsight field-of-view selector to WFOV.	P	F
13. Verify that the center circle of the boresight collimator reticle is less than one diameter from the center of the nightsight reticle crosshairs.	P	F
14. (M220A2 only) Remove the boresight collimator power cable.	P	F
15. Remove the boresight collimator from the nightsight.	P	F
16. (M220A1 only) Remove the battery and place it into the battery case.	P	F
17. Place the collimator into the carrying case.	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES**Required**

None

Related

TM 9-1425-450-12

**PERFORM A SYSTEM SELF-TEST ON AN
M220A2 LAUNCHER SYSTEM
071-056-0013**

CONDITIONS

Given an assembled, tripod-mounted or vehicle-mounted M220A2 launcher system.

STANDARDS

Perform a system self-test to determine if the launcher system functions properly. Boresight the daysight to the missile guidance set. Correct all deficiencies the operator has the authority to correct. Report all other deficiencies to the supervisor.

**TRAINING AND EVALUATION
Training Information Outline**

1. Perform a system self-test before and after installing the launcher system on a vehicle; perform a system self-test daily after the system is in use and each time you change an electrical component. Also perform a system self-test whenever--
 - a. The launcher system has been moved over rough terrain.
 - b. The launcher system has been moved using the extended travel mode.
 - c. The temperature rises or falls by at least 10 degrees (Fahrenheit).
 - d. The launcher system has operated continuously for more than 4 hours.
 - e. The tripod-mounted launcher has been moved to a new operating site.

WARNING

If an encased missile is loaded, ensure the arming lever is lowered to the safe position.

CAUTION

Perform the system self-test as quickly as possible. If you take too long to perform the test, the battery assembly may not have enough power to fire the missiles.

2. Set the FOV selector switch on the nightsight to NFOV.
3. On the daysight, set the focus control to +3.
4. On the nightsight, set the ON/OFF/STBY switch to ON. Check to ensure that the nightsight cooler is running.

a. If the cooler does not run, check to ensure that the nightsight battery power conditioner CB1 circuit breaker is set to ON. If the nightsight cooler still does not run, then remove and replace the following, in this order, until it does:

- (1) The nightsight battery power conditioner batteries.
- (2) The nightsight battery power conditioner cable.
- (3) The nightsight battery power conditioner.
- (4) The nightsight.

b. If using vehicle power, check to ensure that the nightsight vehicle power conditioner CB1 circuit breaker is set to ON, then remove and replace the nightsight vehicle power conditioner cable. If the nightsight cooler still does not run, use the nightsight battery power conditioner instead of the nightsight vehicle power conditioner.

5. On the missile guidance set, lift the cover over the TEST/OPERATE switch. Push the TEST/OPERATE switch to the TEST position and hold it.

NOTE: To save time and prevent excessive wear of the TEST/OPERATE switch, set the switch to the TEST position and hold it continuously until the self-test ends. If you release the TEST/OPERATE switch during the self-test, then allow at least 3 seconds before restarting the test. Repeat the complete system self-test after removing and replacing any component.

6. Check to ensure all of the pass/fail indicators on the missile guidance set display light up and remain lit for 3 seconds.

a. If the indicators do not light up, remove and replace the battery assembly (and tag the battery assembly for recharging). Repeat the self-test. If the indicators still do not light up, remove and replace the missile guidance set.

b. If the indicators light up but do not remain lit for 3 seconds, remove and replace the missile guidance set.

NOTE: The pass/fail indicators show the results of the system self-test as it applies to the components of the launcher system. After the initial light up of all pass/fail indicators, the missile guidance set will display either PASS or FAIL as it tests each component.

7. Check to ensure the BATT PASS indicator lights up. If the BATT FAIL indicator lights up instead, remove and replace the battery assembly (and tag the battery assembly for recharging). Repeat the self-test. If the BATT FAIL indicator still lights up, remove and replace the missile guidance set.

8. Check to ensure the MGS PASS indicator lights up. If the MGS FAIL indicator lights up instead, remove and replace the missile guidance set.

a. If the MGS PASS indicator flashes, one of the system self-test setup conditions has not been met. Check to ensure the nightsight field-of-view selector switch is set to NFOV, nightsight ON/OFF/STBY switch is set to ON, and the arming lever is lowered. Repeat the self-test. If the MGS PASS indicator still flashes, remove and replace the nightsight.

b. If the MGS FAIL indicator comes on at the same time as another fail indicator, address the other problem first. Check to ensure that all cables are connected and the night-sight ON/OFF/STBY switch is set to ON. Usually, when the other problem is corrected, the missile guidance set reads the proper signals and all other faults are corrected.

9. Check to ensure the PA PASS indicator lights up. If the PA FAIL indicator lights up instead, remove and replace the nightsight.

NOTE: The launcher system can still fire under a "degraded firing condition." If the PA FAIL indicator lights up and that is the only failure, the missile can still be fired using the daysight. However, this increases the chance that you might lose control of the missile.

10. Check to ensure the OSS PASS indicator lights up. If the OSS FAIL indicator lights up instead, release the TEST/OPERATE switch. Open the boresight adjustment knob covers, turn both azimuth and elevation boresight adjustment knobs fully in one direction, then back off one full turn to about center. Push the TEST/OPERATE switch to the TEST position. Restart the self-test. If the OSS FAIL indicator still lights up, remove and replace the daysight.

11. Check to ensure that the green center lamp in the azimuth/elevation cross lights up. If the green center lamp is lit and not blinking, then boresight adjustments are correct. Make boresight adjustments if the green center lamp is blinking or if any red lamps in the cross are lit.

a. Adjust the boresight by opening the boresight adjustment knob covers. Turn the azimuth and elevation boresight adjustment knobs until the green center lamp is lit and not blinking. Close the boresight adjustment knob covers.

b. If after several adjustments the green center lamp will not light up, release the TEST/OPERATE switch, set the boresight adjustment knobs to about center, then repeat the self-test. If your efforts to boresight the daysight continue to fail, remove and replace the daysight.

NOTE: Whenever you adjust the boresight, you must collimate the nightsight to the daysight. See task number 071-056-0011, Collimate an AN/TAS-4 Series Nightsight to an M220 Launcher System Daysight.

12. Unlock the elevation lock on the traversing unit. Move the launch tube up and down. Check to ensure that the lights on the azimuth/elevation cross move up and down with the launch tube. Lock the elevation lock. Move the launch tube down until it locks in the 8-degree down position. If the lights do not move with the launch tube, remove and replace the traversing unit.

13. Unlock the azimuth lock on the traversing unit. Turn the launch tube right, left, and back to the center. Check to ensure that the lights on the azimuth/elevation cross move right and left with the launch tube. Lock the azimuth lock. Turn the launch tube until it locks in the forward position. If the lights do not move with the launch tube, remove and replace the traversing unit.

14. Release the TEST/OPERATE switch and close the cover.

15. Report to your supervisor all deficiencies the operator is not authorized to correct.

EVALUATION PREPARATION

Setup: Provide the soldier with all equipment listed in the conditions statement. Reset azimuth and elevation boresight adjustment knobs to ensure that the soldier will have to adjust the boresight.

Brief Soldier: Tell the soldier to perform a system self-test to determine if the launcher system functions properly. Boresight the daysight to the missile guidance set. Have the soldier correct all deficiencies the operator has the authority to correct. Report all other deficiencies to the supervisor.

EVALUATION GUIDE

Performance Measures	Results	
1. Place the nightsight FOV selector switch to NFOV.	P	F
2. Set the nightsight ON/OFF/STBY switch to ON.	P	F
3. Set the daysight focus control knob to +3.	P	F
4. Check to ensure the indicator lights remain lit for 3 seconds.	P	F
5. Check the BATT pass/fail indicator.	P	F
6. Check the MGS pass/fail indicator.	P	F
7. Check the PA PASS/FAIL indicator.	P	F
8. Check the OSS PASS/FAIL indicator.	P	F
9. Check the azimuth/elevation cross to see if the green center lamp is on.	P	F

Performance Measures	Results	
10. Adjust boresight as needed.	P	F
11. Check to see if the azimuth/elevation cross lamps move up and down with the launch tube.	P	F
12. Check to see if the azimuth/elevation cross lamps move right and left with the launch tube.	P	F
13. Correct all deficiencies the operator has the authority to correct.	P	F
14. Report all other deficiencies to the supervisor.	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required

None

Related

TM 9-1425-450-12

M901 VEHICLE

LOAD A DUAL LAUNCHER WHILE MOUNTED ON AN M901 VEHICLE 071-056-0020

CONDITIONS

Given an operational ITV (M901) with the engine running, two encased missiles (MSR for training) with the forward handling rings and dust covers secured, the launcher in the READY TO LOAD position with the cargo hatch closed, and a requirement to load the launcher.

STANDARDS

As a loader, announce, "Ready to load, light on." Open the cargo hatch to the first stop position. Load the two encased missiles, close the cargo hatch, and announce to the gunner, "Up."

TRAINING AND EVALUATION Training Information Outline

Load the dual launcher.

1. Inspect the missiles--
 - For gouges, punctures, and cracks.
 - To see whether the humidity indicator is blue.
 - To locate any damaged indexing lugs.
 - To ensure the diaphragm has not ruptured.
 - To ensure the electrical connector and dust cover are present.
 - To ensure the forward handling ring and quick-release clamp are present and secured.
2. Prepare the missiles in the ready racks.
 - a. Remove the straps from both missiles. Remove the quick release clamp, the forward handling ring, and the dust cover.
 - b. Place one missile on the carrier floor.
 - c. Ensure the READY TO LOAD light is on.
 - d. Open the cargo hatch to the first detent; unlock the left launch tube locking handle (up is the unlocked position).
3. Load the missiles.
 - a. Secure the encased missile by placing your right hand about midway on the missile. Position your left hand so that the heel of your hand is at the bottom of the missile and your fingers are underneath the missile.

- b. Raise the front of the missile; place the indexing lugs on the launcher rail. Slide the missile forward until the front of the missile seats against the forward centering ring.
 - c. Hold the missile in place while you pull down the locking handle.
 - d. Repeat steps 1 through 3 for the other missile, if two missiles are to be loaded.
4. Close the cargo hatch by releasing the cargo hatch stop locking lug, then pull down on the cargo hatch strap.

CAUTION

1. Ensure the missile is fully seated against the forward centering ring of the launch tube before engaging the missile locking handle.
2. If locking the missile locking handle requires abnormal force (greater than 30 pounds), place it in the unlocked position and reseal the missile. Ensure it is fully seated against the forward centering ring of the launch tube.
3. Push the missile up firmly against the launcher, and try to place the missile locking handle to the locked position.
4. If abnormal force is still required to lock the missile locking handle, remove the missile and inspect it for damage. If the missile is damaged, dispose of it IAW with malfunction procedures.
5. Load a serviceable missile into the launch tube. If the missile is not damaged, notify unit maintenance. Failure to observe this caution may result in damage to the system.

EVALUATION PREPARATION

Setup: At the test site, provide all the equipment and personnel listed in the task conditions statement. Use simulated missile rounds instead of live missiles.

Brief Soldier: Tell the soldier that he will be required to load the dual launcher. Tell the soldier that he must perform the task without damage to equipment or injury to personnel.

EVALUATION GUIDE**Performance Measures****Results**

Load the dual launcher:

- | | | |
|--|---|---|
| 1. Inspect the missile. | P | F |
| 2. Ensure the READY TO LOAD light is ON. | P | F |
| 3. Open the cargo hatch to the first detent. | P | F |
| 4. Load the two missiles. | P | F |
| 5. Close the cargo hatch. | P | F |

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES**Required**

None

Related

FM 23-34
TM 9-2350-259-10

UNLOAD A DUAL LAUNCHER WHILE MOUNTED ON AN M901 VEHICLE 071-056-0021

CONDITIONS

Given an operational ITV (M901) with the engine running. Two encased missiles (MSR for training) or expended missile casings in the launcher, launcher in the load position, and a requirement to unload the launcher system.

STANDARDS

Remove the encased missiles from the launch tubes and prepare them for storage without damage to equipment or injury to personnel. If the missiles were fired, remove the expended missiles casings and clear the launcher.

TRAINING AND EVALUATION Training Information Outline

CAUTION

During training or support and stability operations, dispose of wire, case, and retaining rings (scrap metal) IAW SOP after firing practice rounds.

1. Unload the launcher. The loader--
 - a. Ensures the READY TO LOAD light is on.
 - b. Opens the cargo hatch to the first detent.
 - c. Places the rear of the left hand, palm up, on the bottom rear of the missile and pushes slightly up.
 - d. Unlocks the left launch tube by grasping the locking handle with the right hand, pushes in on the detent lock, and pushes up on the handle.
 - e. Removes the expended missile case from the left launch tube by moving the right hand under the missile.
 - (1) Lowers the rear of the missile.
 - (2) Slides the indexing lugs along the launcher rails rearward until the missile clears the tube.
 - (3) Throws expended missile out of the carrier over the left side.
2. Repeats the same procedures for the right tube, except all left-handed actions are right-handed actions.

NOTE: If the missiles are not fired, recover them by replacing the forward handling ring, quick release clamp, and the electrical connector dust cover. Place the missiles in the ready racks.

EVALUATION PREPARATION

Setup: At the test site, provide all the equipment and personnel listed in the task conditions statement. Use simulated missile rounds instead of live missiles.

Brief Soldier: Tell the soldier to unload two of the simulated missiles without damage to equipment or injury to personnel.

EVALUATION GUIDE

Performance Measures

Results

Unload the dual launcher:

- | | | |
|---|---|---|
| 1. Ensure the READY TO LOAD light is illuminated. | P | F |
| 2. Open the cargo hatch to the first detent. | P | F |
| 3. Remove the missiles from the tubes and throw them outside the carrier. | P | F |
| 4. Recover the missiles if they have not been fired. | P | F |

NOTE: If the missiles are not fired, recover them by placing the forward handling ring, quick release clamp, and the electrical connector dust cover. Place the missiles in the ready racks.

- | | | |
|---------------------------|---|---|
| 5. Close the cargo hatch. | P | F |
|---------------------------|---|---|

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required

None

Related

FM 23-34
TM 9-2350-259-10

Section III. 11H20 TASKS

BASIC TACTICS

CONDUCT PREPARATION OF A MOUNTED M220 LAUNCHER SYSTEM FIRING POSITION 071-056-0025

CONDITIONS

Given a vehicle-mounted M220 launcher system, TOW crew with load-bearing equipment (LBE), individual weapons, pioneer tools, the specific position for the weapon location, and the specific sector of fire.

STANDARDS

During day or night, prepare a firing position that does not restrict the TOW's target engagement; that provides concealment from ground and air observation for the crew and vehicle; that blends with surrounding terrain so as not to be detected 350 meters to the front; and whose backblast area is clear as possible of debris that could increase the launch signature.

TRAINING AND EVALUATION **Training Information Outline**

<p style="text-align: center;">CAUTION</p> <p>During training or stability and support operations, comply with SOP, OPORD, and local regulations, or whichever applies, concerning cutting of live vegetation, digging of holes, and measures to prevent erosion.</p>
--

1. Camouflage and conceal the firing position to blend with the surrounding terrain.
 - a. Using terrain-driving techniques, approach the position from the rear or the flank.
 - b. When taking the route to the position, try to follow existing paths, roads, fences, or natural lines in the terrain.
 - c. Ensure the exposed routes do not end at the position.
 - d. If only a short portion of the route into or around the position is exposed, use tree branches to sweep out the tracks.
 - e. Keep traffic into and out of the position to a minimum (that is, essential movements only).
 - f. Upon moving into a position, erase the trail leading into the position.

2. Use natural camouflage.
 - a. Keep the natural vegetation used for camouflage fresh by changing it often. Wilted vegetation makes the position easy to find.
 - b. Cut the vegetation used as camouflage from a different area than the position.
 - c. Match the camouflage with the other vegetation in the area.
 - d. Ensure the camouflage does not interfere with the firing of the weapon.
3. Use camouflage nets.
 - a. Blend the nets with the surrounding terrain or vegetation.
 - b. Ensure the nets do not interfere with firing from the position.
 - (1) Raise the nets above the top of the vehicle. To keep the nets above the vehicle, use poles or small tree branches for support.
 - (2) If the vehicle is in a hull-defilade position, ensure that the vehicle outline is broken and that the net drapes over the vehicle and blends with the surrounding terrain (Figure 1).

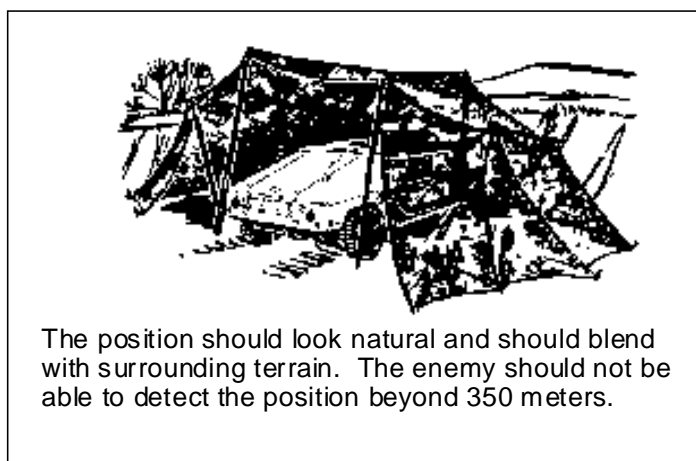


Figure 1. Hull defilade with camouflage net.

- (3) If no hull-down position is available, use a hide position (Figure 2).
4. Inspect the camouflage.
 - a. Ensure that the ground behind the TOW (about 25 meters) is free of leaves and dirt so the backblast does not leave a signature.
 - b. Do not leave any evidence of digging. Do not leave equipment lying around. Conceal or camouflage everything.
 - c. If possible, move 350 meters in front of the position to ensure that the position looks natural and blends with its surroundings.

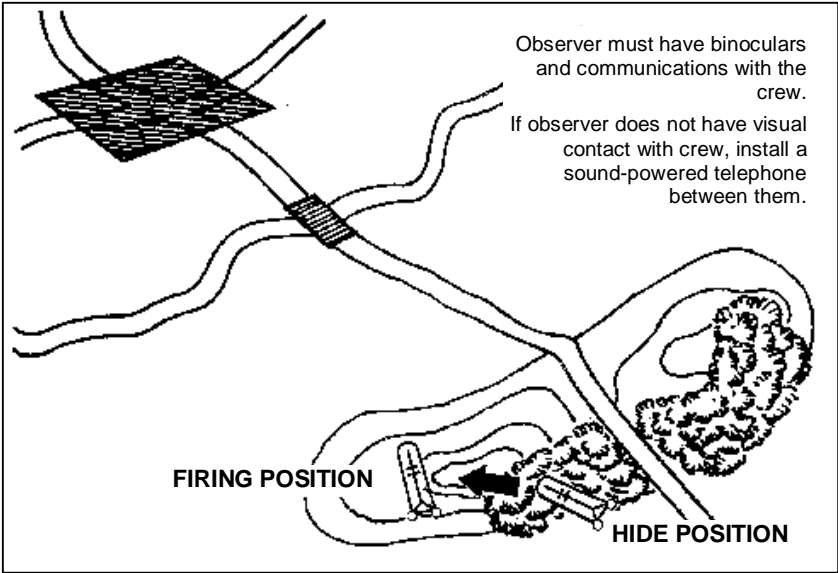


Figure 2. Hull-down position.

EVALUATION PREPARATION

Setup: Provide the soldier with all equipment, personnel, and information listed in the task conditions statement.

Brief Soldier: Tell the soldier that he will be required to supervise camouflaging of the position to ensure it meets the following criteria:

- It does not restrict the TOW's target engagement.
- It provides concealment from ground and air observation.
- Its backblast area is as clear as possible of debris.

EVALUATION GUIDE

Performance Measures	Results	
1. Ensure the natural vegetation used for camouflage is fresh.	P	F
2. Ensure all vehicles use the same route into the position.	P	F
3. Ensure the backblast area (about 25 meters) is free of leaves and dirt.	P	F
4. Ensure the vehicle position is not detectable from the front at 350 meters.	P	F

Performance Measures**Results**

- | | | |
|--|---|---|
| 5. Ensure the camouflage does not restrict the TOW's target engagement. | P | F |
| 6. Ensure the camouflage provides concealment from ground and air observation. | P | F |

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES**Required**

None

Related

FM 7-91
FM 23-34

CONDUCT PREPARATION OF A DISMOUNTED M220 LAUNCHER SYSTEM FIRING POSITION 071-056-0024

CONDITIONS

Given a dismounted M220 launcher system, a TOW crew with load-bearing equipment (LBE), individual weapons, waterproof material (packing material or poncho), pioneer tools, logs (4 to 6 inches in diameter), the specific position for the weapon location, and the specific sector of fire.

STANDARDS

During day or night, ensure that the firing position does not restrict the TOW's target engagement; that it provides protection for both the weapon and the crew; that it blends in with the surroundings, so that it cannot be easily detected 35 meters to the front and cannot be seen from the air; and so that its backblast area is as clear as possible of debris that could increase the launch signature.

TRAINING AND EVALUATION **Training Information Outline**

CAUTION

During training or stability and support operations, comply with SOP, OPORD, and local regulations, whichever applies, as to cutting live vegetation, digging holes, and preventing erosion.

NOTE: When constructing a dismounted position, do not dismount the TOW from its vehicle until the position will both support and protect the employment of the TOW. Use only the tripod to outline the dismounted position.

1. Construct the position--
 - a. Clear fields of fire and dig the weapon's position first. As time allows, add overhead protection for the crew and missiles. To ensure an adequate line-of-sight, allow at least 30 inches of clearance between the gunner's line of sight to a target and any obstructions located between 500 and 900 meters from the firing position. Dig the position 24 inches deep, then scoop out a place for the missile guidance set (MGS), either to the front or under the tripod (Figure 1).

NOTE: A line-of-sight clearance less than 30 inches increases the probability that the missile will hit the ground.

b. You must allow 9 inches of clearance between the bottom of the launch tube and the parapet. Build a parapet to the front and flanks of the position at least 18 inches thick. This will provide additional protection against small arms fire and front mortar and artillery fragments.

c. Disconnect the MGS and position it in the place made for it. Then place the launcher into the position. Reconnect the MGS and check the boresight.

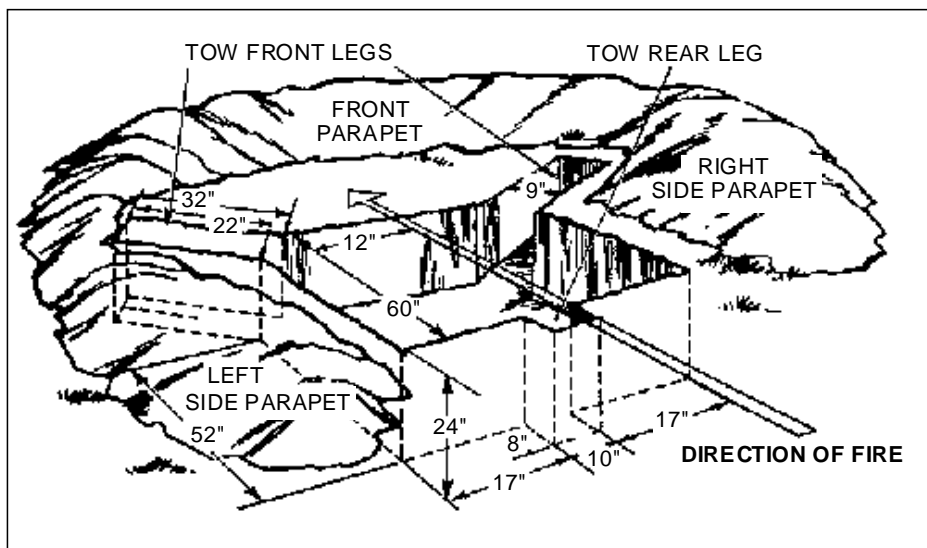


Figure 1. Dig a position.

d. Improve the position by adding overhead cover for the crew and missiles. Provide overhead protection for squad personnel and missiles by digging squad positions on each side and to the rear of the position.

e. Dig to the flank (90 degrees to the primary direction of fire) and use the strongest material available for the roof. Put plastic or canvas down before throwing the dirt on the roof to help keep the ceiling from leaking. If you use sandbags, cover them with canvas or plastic. Wet sandbags are heavy and may cave in. Place at least 20 inches of dirt on top of the storage/protective area (Figure 2).

2. Camouflage the position.

a. Place sod from the position on the parapet so that it looks natural and has a good chance of growing.

b. Cover all fresh dirt with leaves or brush so that it blends with the ground around the position. If you need more vegetation to break up the outline of the parapet, get it from far to the rear of the position. This vegetation should look like the vegetation around the position and, if possible, should have intact roots. Do not use so much vegetation that the position has more than the surrounding area. Camouflage the holes or cuts from which vegetation was removed.

c. If the position is covered, camouflage it like a parapet. If it is not covered, camouflage it with camouflage nets or available brush, branches, and so forth, so that it is not visible from above.

d. Replace foliage if it withers or begins to change color. Try to get sod and vegetation to grow, so that the position improves as time passes. Remember, the position can always be improved. Approach the position only from the rear, ensuring you leave no signs you were there. Cover all footprints around and leading into and out of the position.

e. Do not litter the area or make unnecessary noise while preparing the position. Do not disturb vegetation not used to prepare the position. The area around the position should look as natural as possible.

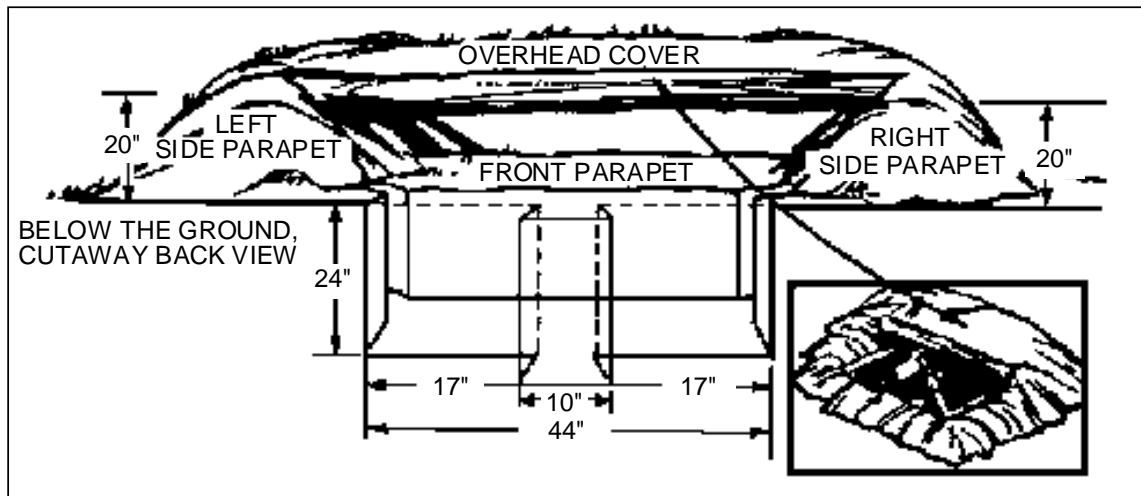


Figure 2. Storage protective area.

3. Kneel the launcher. If the gunner is being suppressed by fire and must conceal the TOW, he can kneel (lower) the launcher below ground level.

- a. Have the gunner lift the encased missile with his right shoulder.
- b. Release the friction locking handle and detent stop on the rear leg and allow the rear leg to slide back into its notch. The launcher moves back by its own weight.
- c. Depress and lock the launch tube in the full downward position so it does not show above the frontal protection.

4. Raise the launcher.

- a. Lift the rear of the encased missile and push forward and down on the rear leg. (Elevation and azimuth locks must be engaged.)
- b. Check the level indicators and the friction locking handle.

5. Inspect camouflage.

- a. Ensure that the ground behind the TOW out to 25 meters is free of leaves and dirt so the backblast from the weapon does not leave a signature.

- b. Do not leave any evidence of digging. Do not leave equipment lying around. Everything must be concealed or camouflaged.
- c. If possible, move at least 35 meters to the front of the position and study it. Ensure that the position looks natural and blends with its surroundings.

EVALUATION PREPARATION

Setup: At the test site, provide all the equipment, personnel, and information stated in the task conditions statement.

Brief Soldier: Tell the soldier that he will be required to supervise, assist, and make on-the-spot corrections while the squad prepares a ground-mounted TOW position. The position must--

- Allow the squad to engage the enemy in the assigned sector of fire.
- Provide protection for both weapon and crew.
- Blend with the surroundings so it cannot be detected 35 meters to the front and cannot be seen from the air.

EVALUATION GUIDE

Performance Measures	Results	
1. Outline position and clear fields of fire.	P	F
2. Ensure sector of fire is properly covered.	P	F
3. Inspect the position for proper dimensions.	P	F
4. Ensure the backblast area (about 25 meters) is free of leaves and dirt.	P	F
5. Ensure the weapon position is not detectable from the front at 35 meters.	P	F
6. Ensure the camouflage does not restrict TOW target engagement.	P	F
7. Ensure the camouflage provides concealment from ground and air observation.	P	F
8. Ensure the natural vegetation used for camouflage is fresh.	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required

None

Related

FM 7-91

TOW GENERAL

DETERMINE M220 LAUNCHER SYSTEM FIRING LIMITATIONS 071-056-0030

CONDITIONS

Given a tripod or vehicle mounted M220A1 or M220A2 launcher system, a firing position, a sector of fire, and a completed TOW range card for the sector of fire.

STANDARDS

Determine M220 launcher system firing limitations and take necessary actions to compensate for firing over water, over electrical wires, in windy conditions, through smoke and fire, from bunkers and buildings, and from a vehicle. Comply with clearance requirements in *FM 23-34*.

TRAINING AND EVALUATION Training Information Outline

1. Fire over water. Ensure the TOW position is as far above and back from the water as the tactical situation allows. Analyze the sector as soon as you occupy the position to determine whether firing over the water will affect the employment of the TOW. You will use an extended range chart to determine firing data. Which chart you will use depends on the width of the lake and, if you are firing over water less than 1,100 meters wide, which TOW you will be using.

a. **Water less than 1,100 meters wide.** Firing across bodies of water less than or equal to 1,100 meters wide does not affect the missile's range.

(1) To determine how much water you can fire across, you need to know, in meters (a meter is about 3.3 feet)--

- The height of the firing position above the water.
- The height of the target above the water.

(2) The type of TOW missile determines whether you use the chart shown in Figure 1a or in Figure 1b. Both charts work the same, so directions apply to both.

- TOW 1--Use the chart in Figure 1A.
- TOW 2--Use the chart in Figure 1B.

(3) Find the number on the left side of the chart that corresponds to the height of the launcher above water.

(4) Place the end of a straightedge on the tick mark beside that number.

(5) Find the number on the right side of the chart that corresponds to the height of the target above water.

(6) Place the other end of the straightedge on the tick mark beside that number.

- (7) Read the number where the straightedge crosses the centerline. (The number represents how many meters of water you can fire the TOW over.)
- (8) If the straightedge crosses between two numbers, you may have to estimate.

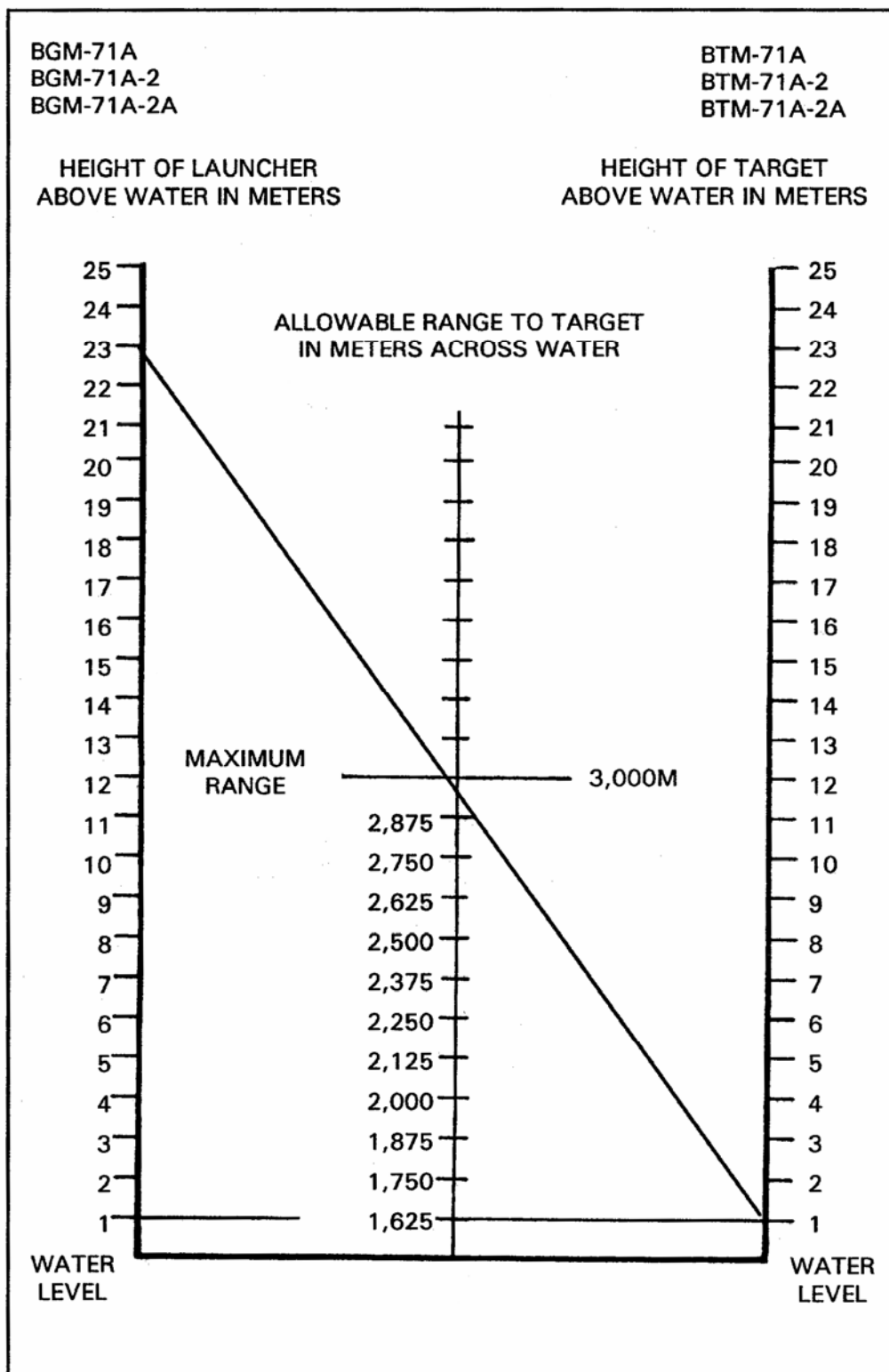


Figure 1A.
Extended range chart, lake less than or equal to 1,100 meters wide, TOW 1.

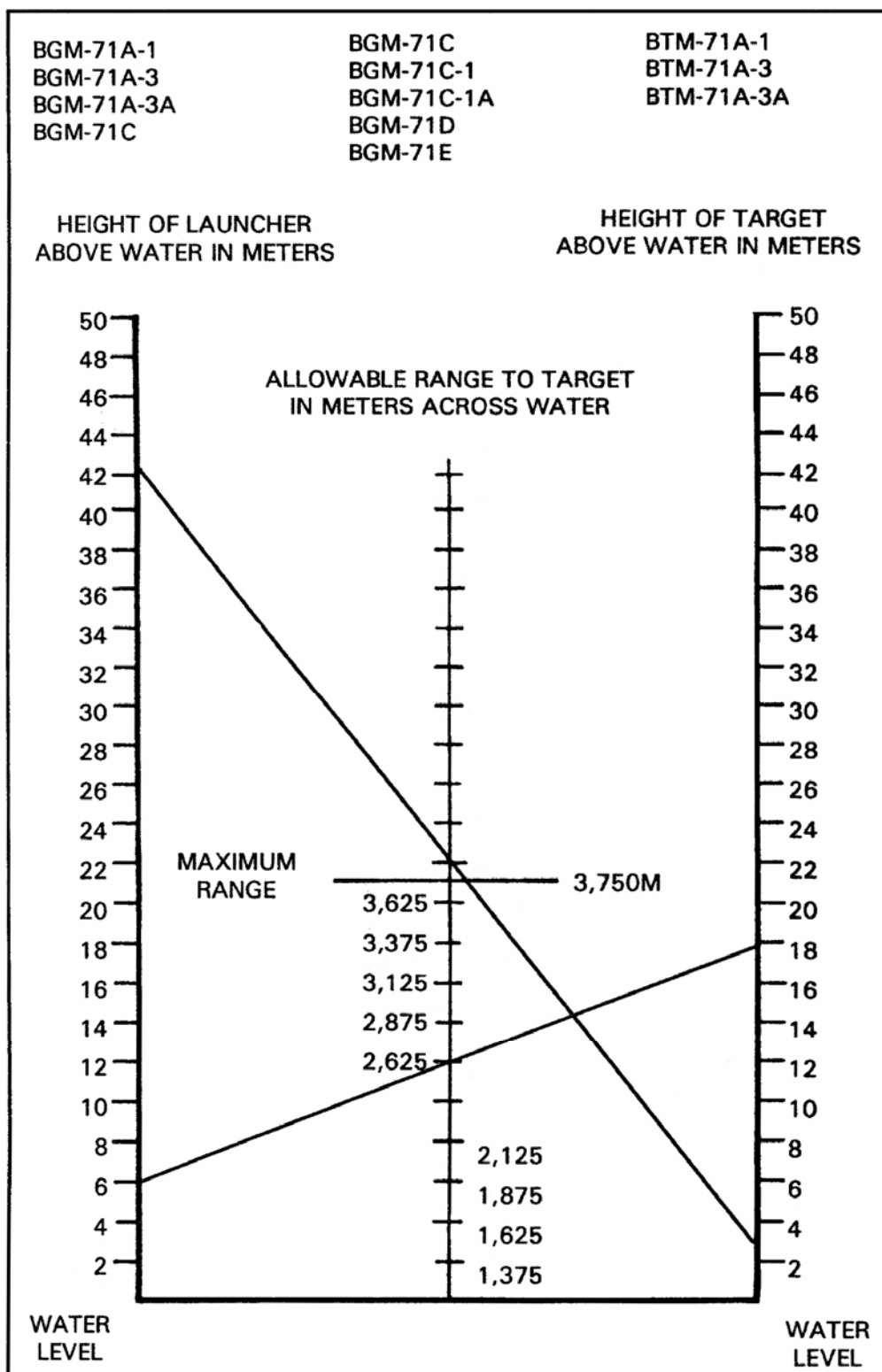


Figure 1B.
Extended range chart, lake less than or equal to 1,100 meters, TOW 2.

b. **Water more than 1,100 meters wide.** Firing across bodies of water wider than 1,100 meters can reduce the range of the TOW. If a large amount of the wire falls in the water, the water will short out the signal. If you know the width of the lake, and it is more than 1,100 meters wide, you can determine how far the missile will travel.

(1) To determine how much water you can fire across, you need to know, in meters--

- The distance from the launcher to the water.
- The width of the lake.
- The height of the firing position above the water.
- The height of the target above the water.

(2) Once you have this information, you can use the chart in Figure 2 (page 3-64) to compute your maximum engagement range. This chart applies to either the TOW 1 or the TOW 2 missile. For the example used in Figure 2, the launcher is 500 meters from the lake, the lake is 1,600 meters wide, the firing position is 5 meters above the water, and the target is 6 meters above the water. (Steps correspond to those in Figure 2.)

(a) Add the distance from the firing position to the lake to the width of the lake.

Step A	500	Distance from launcher to water
Step B	+ <u>1,600</u>	Distance across lake (width of lake)
	2,100	Total distance

(b) Add the heights of the firing position above water and the target above water .

Step C	5	Height of firing position above the water
Step D	+ <u>6</u>	Height of target above the water
	11	Total height

(c) Multiply the height total (C+D) times 60.

	11	Total height
Step E	x <u>60</u>	Additional distance for each meter in height
	660	Distance added to compensate for height

(d) Add the total in Step E, Figure 2 to the total in Step B.

Step F	2,100	Total distance
	+ <u>660</u>	Distance added to compensate for height
	2,760	Maximum engagement range

(e) The result is the maximum engagement range.

EXAMPLE: The launcher is 500 meters from a lake, which is 1,600 meters wide. The launcher is 5 meters above the water, and the target is 6 meters above the water.

STEP A	Distance of launcher to lake	500 meters
STEP B	Width of lake	<u>+ 1,600 meters</u>
	Distance missile can travel at water level	2,100 meters
STEP C	Launcher altitude above water	5 meters
STEP D	Target height above water	<u>+ 6 meters</u>
	Total height above water	11 meters
STEP E	Amount distance increases for each meter height	<u>x 60 meters</u>
	Total increase in distance due to height	660 meters
STEP F	Sum from Step B	2,100 meters
	Product from Step E	<u>+ 660 meters</u>
	Maximum engagement range	2,760 meters

Figure 2. Extended-range chart, lake wider than 1,100 meters.

NOTE: To increase the maximum engagement range, raise the launcher's height 1 meter for each 60-meter increase in range required.

2. Fire from organic carriers. Ensure that the backblast area is clear and that the backblast is not directed into the vehicle. Also, ensure you have enough muzzle clearance between the launcher and the vehicle.
3. Fire over electrical wires. If the command-link wires contact a live high-voltage power line, personal injury or loss of control of the missile can occur. The launcher electronics may also be damaged.
4. Fire in windy conditions. Gusty, flanking, or quartering winds can cause the launch tube to vibrate and spoil your tracking performance. Position the TOW behind a windbreak to reduce this problem. Strong winds can move the missile around during flight. However, as long as you keep the cross hairs on center-mass of the target, the weapon system will compensate for wind effects.

5. Fire the weapon through smoke and area fires. Smoke can obscure the line of sight and hide the target. Maintain a smooth tracking rate as the target disappears into a smoke cloud. This ensures it will most likely still be on target (or close to it) when the vehicle emerges from the other side of the smoke cloud. (Practice this technique during field-tracking exercises.) Fire can burn through the command-link wire, which can cause you to lose control of the missile. Avoid firing through or over fire if the wires might contact the fire before the missile impacts.

6. Fire from bunkers and buildings. Fire TOWs from enclosures only if they meet the following requirements:

- a. Ensure the room is no smaller than 17 x 24 feet, with a 7-foot ceiling. You can use smaller rooms, but only if they meet the minimum ventilation requirements for the backblast.
- b. Ensure the room has an opening of at least 20 square feet for ventilation, preferably to the rear of the launcher. Open all windows and doors.
- c. Ensure the room is clear of all loose objects or debris, any of which would be affected by the backblast. Break all glass out of windows. Clear that and all other rubble from the backblast area.
- d. The room should be of sturdy construction.
- e. Everyone in the room must be forward of the rear end of the launch tube.
- f. Everyone in the room must wear double ear protection to prevent hearing loss. Earplugs and communications (CVC) helmets provide such protection.

7. Follow clearance requirements (Figure 3).

- a. For TOW muzzle clearance, ensure the ends of the launch tubes have at least 9 inches of clearance. This avoids damage to the wings and control surfaces when they extend after the missile clears the launch tube.
- b. Extend the muzzle of the launch tube beyond any enclosure, windowsill, or aperture.
- c. Ensure you have at least 30 inches of clearance between the line of sight and any obstruction located between 500 and 900 meters downrange. This clearance is required because the missile may fly below the gunner's line of sight between 500 and 900 meters. You need 30-inch line-of-sight clearance to ensure the missile will not hit the ground on its way to the target.

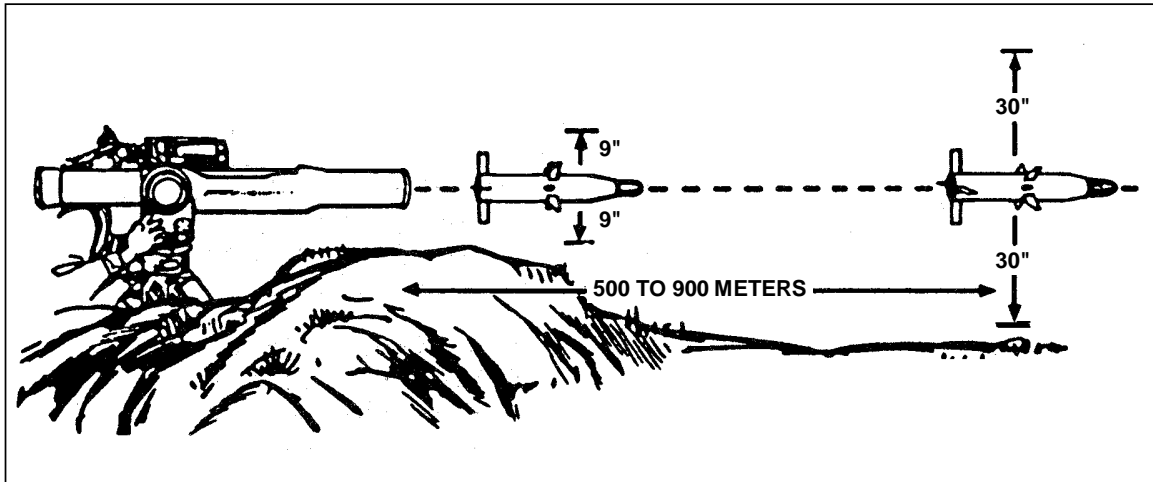


Figure 3. Clearance requirements.

EVALUATION GUIDE

Performance Measures	Results	
1. Determine the maximum range using the following information for firing over water. <ul style="list-style-type: none"> Distance from the launcher to the lake is 500 meters. Distance you know the missile can travel 1,600 meters. Height of the launcher above the water is 5 meters. Height of the target above the water is 10 meters. 	P	F
2. What action can be taken to prevent gusty wind, flanking wind, or quartering wind from vibrating the launch tube and spoiling your tracking performance?	P	F
3. What can happen if the command-link wires contact a high-voltage power line?	P	F
4. What should you do when you are tracking a target and it enters a smoke cloud?	P	F
5. What is the minimum amount of square feet required for ventilation when firing a TOW from inside a room?	P	F
6. How many inches of muzzle clearance are required for firing the TOW?	P	F

Performance Measures

Results

7. How many inches of muzzle clearance are required between your line of sight and any obstructions that are located from 500 to 900 meters downrange?	P	F
--	---	---

FEEDBACK

If you answer 5 of the 7 questions correctly, score yourself a GO. If you miss 3 or more questions score yourself a NO-GO. A NO-GO indicates that you need to work on this task some more. (Trainer: see answer sheet next page.)

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ANSWER SHEET

1. 3,000 meters.
2. Provide a windbreak.
3. The gunner could be injured and lose control of the missile, possibly damaging launcher electronics.
4. Continue tracking at a smooth tracking rate.
5. 20 square feet.
6. 9 inches.
7. 30 inches.

REFERENCES

Required

None

Related

None

M966 VEHICLE

CONDUCT MOUNTING OF AN M220 LAUNCHER SYSTEM ON AN M966 VEHICLE 071-056-0032

CONDITIONS

Given a tripod mounted M220A1 or M220A2 launcher system positioned for firing, an encased missile, an M966 TOW carrier, a TOW crew, and an *FM 23-34*.

STANDARDS

Supervise, assist, and make on-the-spot corrections as needed to ensure that soldiers mount the launcher system on the M966 and that the launcher system works. Also make sure soldiers place and secure components and encased missiles in designated locations without damaging equipment or hurting themselves or others.

TRAINING AND EVALUATION Training Information Outline

FM 23-34, Chapter 3, provides the specific duties and responsibilities of each member of the crew. Assign these duties and responsibilities to each member of the crew in such a way as to complete this task with the most possible efficiency. Chapter 3 also provides specific procedures for mounting the weapon system.

EVALUATION PREPARATION

Setup: At the test site, provide all equipment and material as outlined in the task conditions statement.

Brief Soldier: Tell the soldier, "As a member of a TOW squad, mount the TOW and all the required equipment, to include an encased missile, on the M966, and prepare for extended travel."

EVALUATION GUIDE

Performance Measures	Results	
1. Give the command to mount the launcher system.	P	F
2. Supervise, assist, and make on-the-spot corrections in order to--	P	F
a. Secure the missile guidance set (MGS) on the MGS tray.		
• M220A1: with the battery assembly installed.		
• M220A2: with the TOW vehicle power conditioner (VPC) installed.		
b. Mount the traversing unit on the traversing unit adapter and secure it with the top coupling clamp.		
c. Mount the daysight on the traversing unit.		
d. Mount the nightsight on the daysight.		
e. Mount the launch tube on the traversing unit.		
f. Connect the coil cable to the MGS J1 connector.		
• M220A1: Nightsight power conditioner cable connects to nightsight J1 input jack.		
• M220A2: Nightsight VPC cable connects to nightsight J1 input jack; VPC cable connects to VPC.		
g. Complete the self-test portion of the system checkout procedure.		
h. If time permits, collimate the nightsight to the daysight.		
i. Stow and secure the nightsight case and boresight collimator in the right rear of the vehicle.		
j. Stow the MGS cover in the right front passenger footwell.		
k. Stow and secure the tripod in the vehicle at the rear of the missile storage rack.		
• M220A1: Stow coolant cartridge and battery cases in right rear of vehicle; stow battery assembly in battery racks.		
• M220A2: Stow the battery power conditioner in right rear of vehicle; stow battery assembly in battery racks.		
l. Stow the encased missiles in the missile storage racks.		
m. Close and secure the cargo shell door.		

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required
FM 23-34

Related
TM 9-1425-450-12

CONDUCT DISMOUNTING OF AN M220 LAUNCHER SYSTEM FROM AN M966 VEHICLE 071-056-0034

CONDITIONS

Given an M220A1 or M220A2 launcher system mounted on a M966 TOW carrier, an encased missile, a TOW crew, and an *FM 23-34*.

STANDARDS

Supervise, assist, and make on-the-spot corrections to ensure soldiers remove the launcher system and encased missile from the vehicle and emplace both at a firing position. Ensure they complete the task without damaging equipment or hurting themselves or others.

TRAINING AND EVALUATION Training Information Outline

FM 23-34, Chapter 3, provides the specific duties and responsibilities of each member of the crew. Assign these duties and responsibilities to each member of the crew in such a way as to complete this task with the most possible efficiency. Chapter 3 also provides specific procedures for mounting the weapon system.

EVALUATION PREPARATION

Setup: At the test site, provide all equipment and material as outlined in the task conditions statement.

Brief Soldier: Tell the soldiers to dismount the launcher system and all required equipment, to include an encased missile. Mount the launcher system on the tripod and prepare for firing.

EVALUATION GUIDE

Performance Measures

Results

1. Squad or section leader: Give the command to dismount the launcher system.	P	F
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Performance Measures**Results**

2. Supervise, help, and make-on-the spot corrections to ensure the soldier accomplishes the following:

P F

- a. Dismount the launcher system and an encased missile.
- b. Disconnect all cables and stow them in the designated place.
- c. Disassemble and remove the launch tube, nightsight, daysight, and traversing unit from the vehicle mount.
- d. Remove the tripod, the nightsight carrying case, the boresight collimator, the MGS, and the encased missile(s) from the vehicle. If you have the M220A1, also remove the coolant cartridge and battery cases. If you have the M220A2, remove the battery power conditioner (BPC).
- e. Place the nightsight in its carrying case.
- f. Place the MGS cover on the MGS and secure it; remove the TOW VPC (vehicle power conditioner) and the battery assembly that you installed just before putting on the MGS cover.
- g. After off-loading equipment, position it where you can easily move it later to a ground firing site.
- h. Mount the launcher system on the tripod and prepare for firing.
- i. Comply with the safety precautions of both the vehicle and the launcher system.

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES**Required**

FM 23-34

Related

TM 9-1425-450-12

SELECT M220 LAUNCHER SYSTEM FIRING POSITIONS

071-056-0059

CONDITIONS

Given an M220A1 or M220A2 launcher system mounted on a vehicle , a TOW crew, a sector of fire, and a general location for the launcher system.

STANDARDS

Select a primary position that allows the best coverage of the assigned sector of fire, an alternate position that covers the same sector of fire, and a supplementary position to engage any targets outside the primary sector of fire that cannot be engaged from either the primary or alternate position. Select firing positions that do not restrict observation and target engagement in the assigned sector of fire. Provide concealment from hostile ground and air observation, designate covered and concealed routes into and between positions. Allow mutual support between squad positions and with other elements.

TRAINING AND EVALUATION

Training Information Outline

1. Section leader: Designate the sector of fire for primary, alternate, and supplementary positions.
2. Section/squad leader: Select the firing positions.
3. Squad leader: Brief the section leader on the squad leader's TOW firing positions.
4. Ensure positions selected provide the following:
 - a. Cover, especially to the front.
 - b. Concealment from ground and aerial observation.
 - c. Observation and fields of fire into the assigned sector of fire or engagement areas.
 - d. Covered and concealed routes to and between positions.
 - e. Mutual support between squad positions and other elements.
5. Select positions below ridgelines and crests, preferably on the sides of hills. Choose positions and routes to the positions that are as dry and level as possible. Avoid swampy areas and steep hillsides. Avoid positions on or near prominent terrain features. Ensure routes to and between positions offer cover and concealment.
6. At night or during other limited visibility, TOW squads should be positioned where they can detect and engage targets. Leaders should not assume that darkness will hide their firing positions. After selecting a position, a unit should work to improve it as long as it is

occupied. A unit remaining in a position for a long time can make extensive improvement, especially with the help of engineers.

7. Each squad should choose a primary firing position and as many alternate positions as practical. Depending on its terrain and mission, the squad may be assigned a supplementary position (Figure 1). Primary and alternate positions are used both in the attack and in the defense. A supplementary position is used only in the defense.

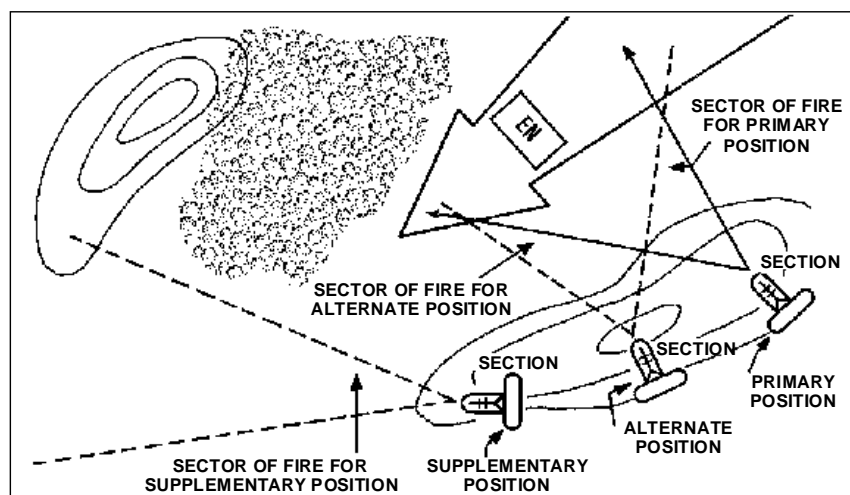


Figure 1. Primary, alternate, and supplementary positions.

a. **Select primary position.** This is the initial firing position from which a squad covers an assigned sector or an engagement area. It should be the best location from which to engage the vehicles. The platoon leader or section leader normally designates the general location of the primary position.

(1) Whenever possible, select alternate positions at least 300 meters from the primary position. This keeps enemy artillery fires on the primary position from hitting the alternate position. Terrain restrictions may prevent dispersion, but the leader should always consider dispersion when choosing alternate positions.

(2) When the squad leader selects the alternate position(s), he should report each location to the section and platoon leaders. During the battle, he should also report whenever he moves to an alternate position. Besides moving to the alternate position when the primary position begins receiving fire, a squad may also move to it to confuse the enemy. If time permits, the squad should prepare each alternate position with as much care as the primary position.

(3) **Supplementary position.** Select this position to cover an area or possible enemy avenue of approach that cannot be covered from the primary or the alternate position such as areas or approaches to the flank or rear of a unit. As the least, reconnoiter a supplementary position and prepare a range card for it. At times, the OPORD will specify that the position is to be prepared. Normally, a supplementary position is only occupied on order.

b. **Exploit TOW accuracy to 3,750 meters.** This long range gives the TOW an advantage at ranges greater than 1,500 meters. The TOW system can engage enemy tanks

but at the same time remain safe from return tank fire. This is due to the standoff achieved at maximum range.

(1) Exploiting the range this way takes advantages of one of the key features of the weapon its standoff range and protects the crew from return tank fire.

(2) Positioning the TOW to the flank, farther to the rear of the line of enemy contact, or farther from its sector of fire, gives you another 1,500 meters of range.

c. **Arrange for mutual support.** Provide some protection for the TOW crew by ensuring continuous coverage of enemy armored vehicles. This consists of two parts:

(1) Use the TOW section so that its fires interlock with and support each other and other antiarmor weapons. Both TOWs within the section should cover as much of the sector of fire as possible.

(2) Try to position the TOWs within the section's sector of fire so they can engage enemy armored vehicles assaulting other TOW positions.

d. **Integrate with nearby infantry for security.** Lone TOW crews are vulnerable to attacks against their position by armor and dismounted infantry. Therefore, they should integrate with nearby infantry wherever possible.

e. **Engage enemy from flank and avoid frontal fire.** The armor on the frontal glacis is the hardest to defeat. Also, tanks equipped with reactive armor in their frontal 60 percent arcs are easier to defeat from the flank or rear. When tanks are advancing, their firepower and observation are oriented to the front. This makes detecting and retracing a missile launched from its flanks difficult. In addition to firing from the flank, site the TOW so that it is not only concealed, but also in defilade from the direction of the enemy. Concealing the flash, not only from the following tanks, but also from the enemy's OPs, is also essential.

EVALUATION PREPARATION

Setup: Provide the section leader an area where a TOW section can be used in a primary position, with alternate and supplementary positions.

Brief Soldier: Tell the soldier to select the best position for coverage of the primary sector of fire, an alternate position that covers the same sector of fire, and a supplementary position to engage targets that cannot be engaged from the primary or alternate position.

EVALUATION GUIDE

Performance Measures	Results	
1. Ensure the primary position allows maximum coverage of the sector of fire.	P	F
2. Ensure the primary position's sector of fire can be covered from the alternate position.	P	F

Performance Measures**Results**

- | | | |
|--|---|---|
| 3. Ensure a minimum of 300 meters is between the primary and alternate positions. | P | F |
| 4. Ensure the routes into, out of, and between positions have cover and concealment. | P | P |

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES**Required**

None

Related

FM 7-91

Section IV. 11H30 TASKS

BASIC TACTICS

RECOMMEND EMPLOYMENT OF M220 LAUNCHER SYSTEMS 071-316-2651

CONDITIONS

As an M220 antiarmor section leader, given a mission to provide antiarmor fire in support of a combat operation, a 1:50,000-scale military map of the area of operation, and a briefing on the supported unit's concept of the operation.

STANDARDS

Analyze the supported unit's area of operations and scheme of maneuver. Recommend to the supported unit commander that TOW employment permit engagement of threat armor targets in the area of operations at maximum range; provide effective overwatch or base of fire; avoid conspicuous terrain features; provide for flank engagement (when possible); provide for dispersion; provide for mutual support between squad positions and other elements; and provide maximum protection and concealment for the launcher system during operations.

TRAINING AND EVALUATION

Training Information Outline

1. Overlap sectors of fire to provide for mutual support. To do this, you may use primary and secondary sectors of fire. Use secondary sectors of fire to achieve mutual support when--
 - a. Units are widely dispersed.
 - b. Fields of fire are restricted by terrain.
 - c. More than one armor avenue of approach exists.
 - d. Use TOWs in pairs (by section). To be sure that a sector of fire has continuous antiarmor coverage, use TOWs in pairs with overlapping sectors of fire. Used this way, they can support each other. One system can fire while the other is reloading or moving to an alternate position. Use TOWs separately only when that is the only way to cover the armor approaches or to overwatch the attacking company's zone (Figure 1).
 - e. Combine TOW fires with fires of other antiarmor weapons. Position TOWs and other weapons to support each other. Position TOWs and tanks to provide long-range coverage along the high-speed armor approaches to ensure continuous antiarmor fires. Position Dragons and LAWs along the armor avenues of approaches with more restrictive fields of fire. Use TOWs to engage the long-range targets and to add depth to the defense.
 - f. Integrate TOWs with nearby infantry for security. TOW crews by themselves are vulnerable to attacks by mounted and dismounted infantry. To provide security against such attacks, position TOWs to take advantage of the infantry, who will block dismounted and concealed mounted approaches leading to TOW positions (Figure 2).

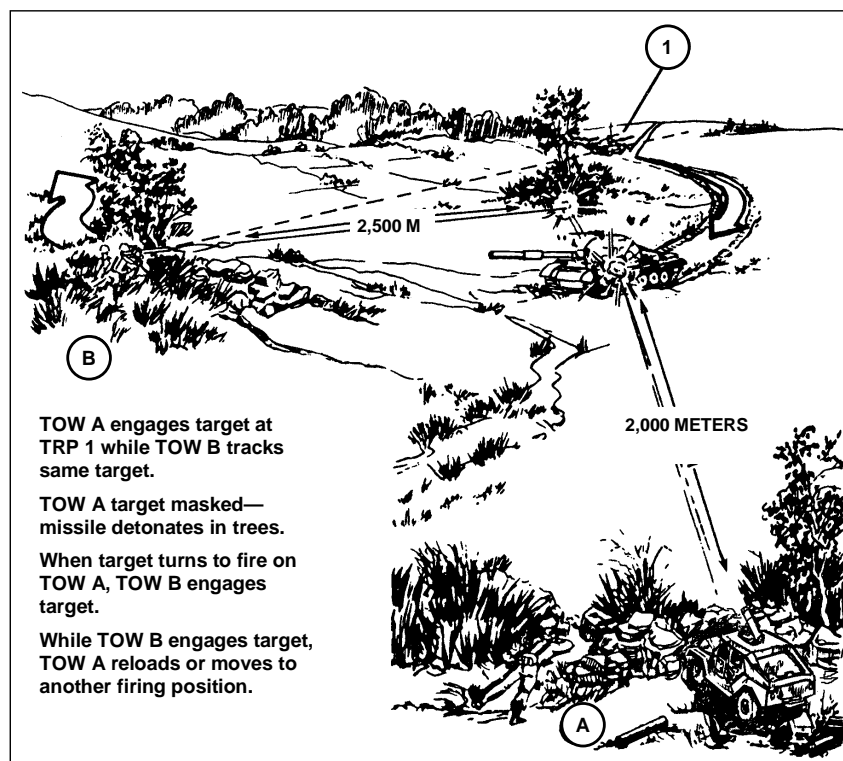


Figure 1. Employ TOWs in pairs.

2. Exploit TOW range. The greatest advantage of the TOW is its accuracy over most tanks at ranges beyond 1,500 meters. The major limitation is that the TOW crew is exposed to enemy suppressive fires while firing. Therefore, the principal factors to consider when positioning TOW for employment are twofold (Figure 3):

- a. Exploit the capabilities of the weapon.
- b. Protect the crew from countermeasures such as artillery and tank fire.

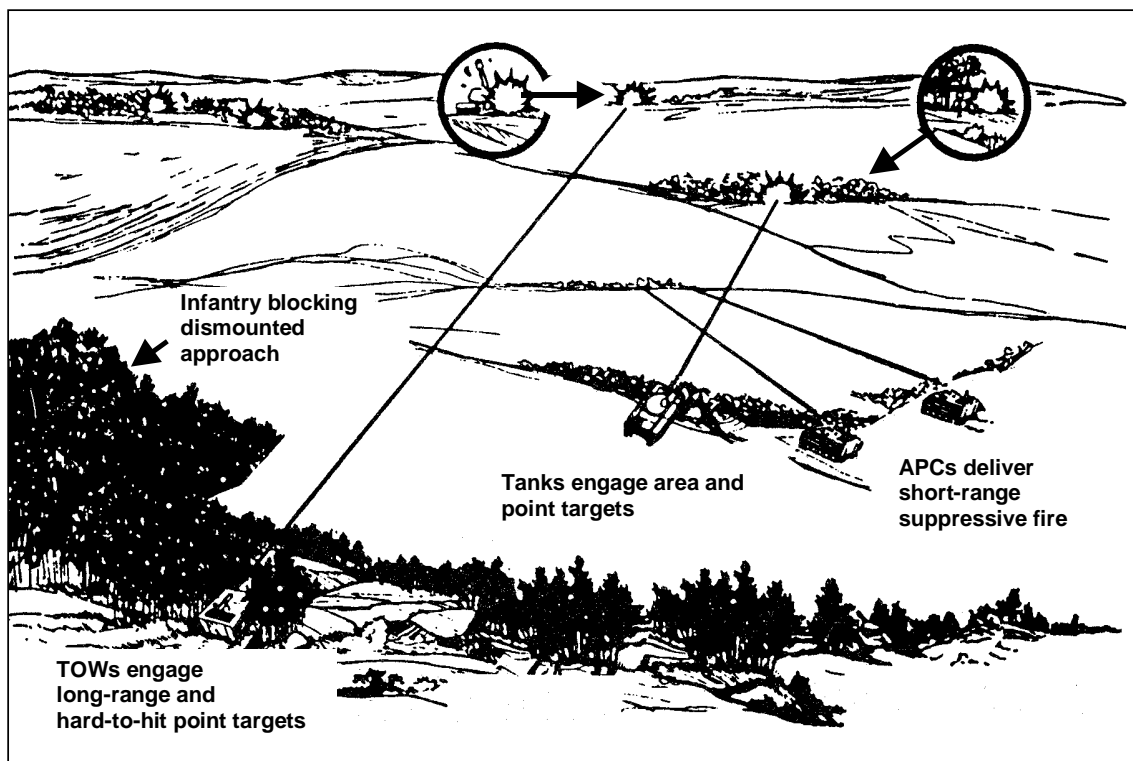


Figure 2. Integrate TOWs with nearby infantry.

3. Avoid conspicuous terrain features. Use terrain to the best advantage. Every piece of terrain has features that can enhance or degrade TOW mission accomplishment. Conspicuous terrain features, such as road junctions, hilltops, and lone buildings or trees, attract the enemy's attention. Also, the enemy may have registered their weapons on them. As a leader, you must recognize key terrain features that can increase the TOW's chances for success and lessen its vulnerability to detection (Figure 4).

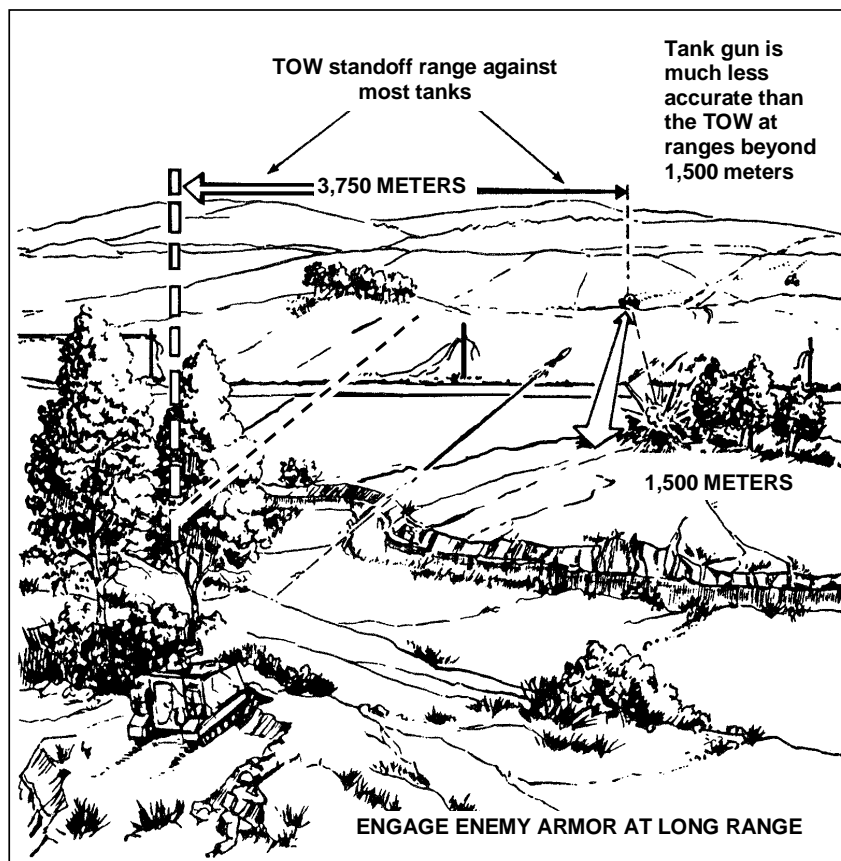


Figure 3. Exploit TOW range.

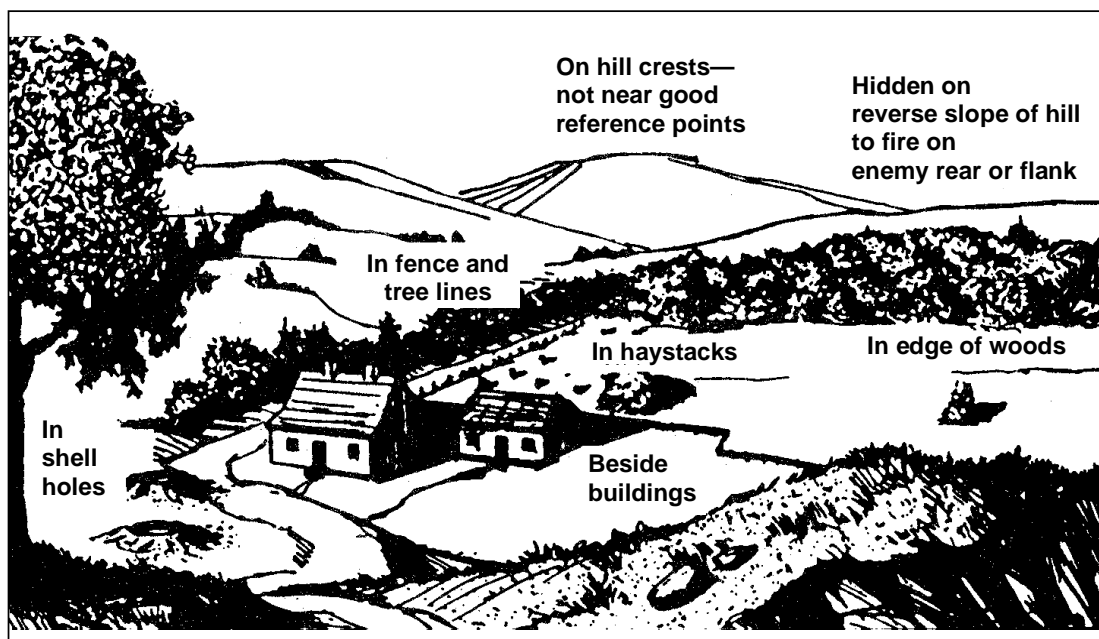


Figure 4. Avoid conspicuous terrain features.

4. Provide for flank engagement. Avoid TOW frontal fire against tanks, since the TOW crew is vulnerable, especially at shorter ranges. The firepower and observation of an advancing enemy tank are oriented to the front. Therefore, detecting and tracing a missile launched from its flank is difficult (Figure 5). However, a trailing enemy tank may see the launch signature or crew movement, and stalk or destroy the weapon from the rear. Thus, in addition to firing from the flank, the crew must site the weapon so that it is in *defilade* when viewed from the direction of the enemy. Also, the crew must put something between itself and the tanks—something the tanks are unlikely to shoot at. This could include a parapet, a wall, or natural cover. Flank concealment is necessary, but flank defilade, which provides cover from fire, is preferred. Concealment of flash is also essential, not only from the following tanks, but also from the enemy's OP.

5. Provide for dispersion. If the section leader can control the fires of both TOW squads, he should separate them at least 300 meters (either laterally or in depth). This distance prevents squads from being suppressed at the same time by the fires of a single volley of artillery from one enemy battery. This separation depends upon the terrain and the section leader's capability to control the fire and movement of the squads (Figure 6).

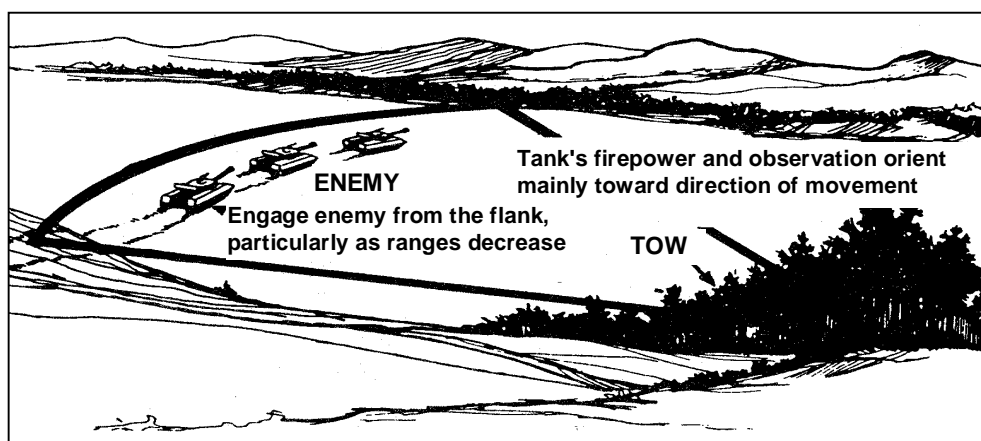


Figure 5. Provide for flank engagement.

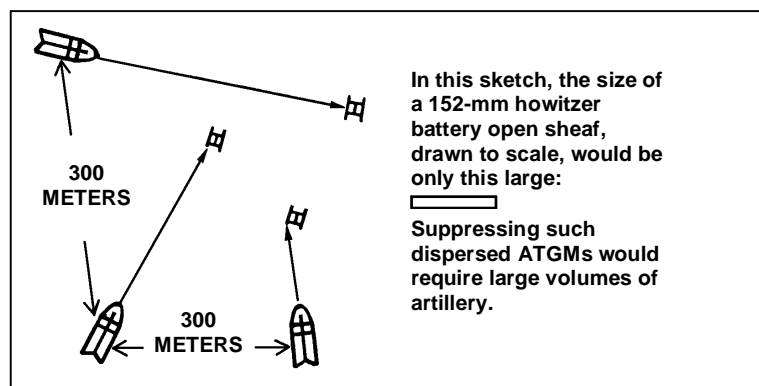


Figure 6. Provide for dispersion.

EVALUATION GUIDE**Performance Measures****Results**

1. Provide for mutual support.	P	F
2. Use TOWs in pairs.	P	F
3. Avoid conspicuous terrain features.	P	F
4. Provide for flank engagement when possible.	P	F
5. Provide for dispersion.	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES**Required**

None

RelatedFM 7-91
FM 71-1

PREPARE A SECTOR SKETCH FOR AN M220 ANTIARMOR SECTION 071-316-4056

CONDITIONS

Given paper, a map, a protractor, and pencils; a defensive sector with identified squad positions; and indirect-fire FPF assigned to a section-size element.

STANDARDS

Prepare a sector sketch as close to scale as possible. Unless required by command or SOP to include more information, include at least the following elements on the sector sketch: the section's primary and secondary sectors of fire; the weapons' primary, secondary, and supplementary positions; the maximum engagement line; observation posts; target reference points; mines, obstacles, and booby traps; indirect-fire target locations; unit designation (no higher than company level); date-time group; dead spaces; and magnetic north.

TRAINING AND EVALUATION **Training Information Outline**

1. Show the entire section's sector in the sector sketch.
 - a. Sketch the main terrain features in the sector of fire and note their ranges.
 - b. Sketch the primary and secondary sectors of fire of your squads (Figure 1).
 - (1) Designate sectors of fire using left and right limits or easily recognizable terrain features such as roads, streams, hills, or wood lines. A sector of fire usually extends from a firing position to the maximum engagement range of the TOW. Assign sectors so that each area is fully cover with the correct type of fire. When placed, one section's secondary section of fire should correspond to another section's primary sector of fire (Figure 2).
 - (2) You will normally give each medium antitank weapon assigned to cover the primary sector of fire both a primary firing position and one or more alternate firing positions. If you assign supplementary positions, then add these to the sketch (Figure 3).
2. Label the target reference points IAW with unit SOP. Plot them on an overlay to help identify target locations and to help control direct and indirect fires. Use man-made objects or terrain features within the platoon's area as reference points. The commander has final control of FPF placement, but he may ask for a recommendation from the section leader. An FPF should be positioned across the most dangerous avenue of approach.

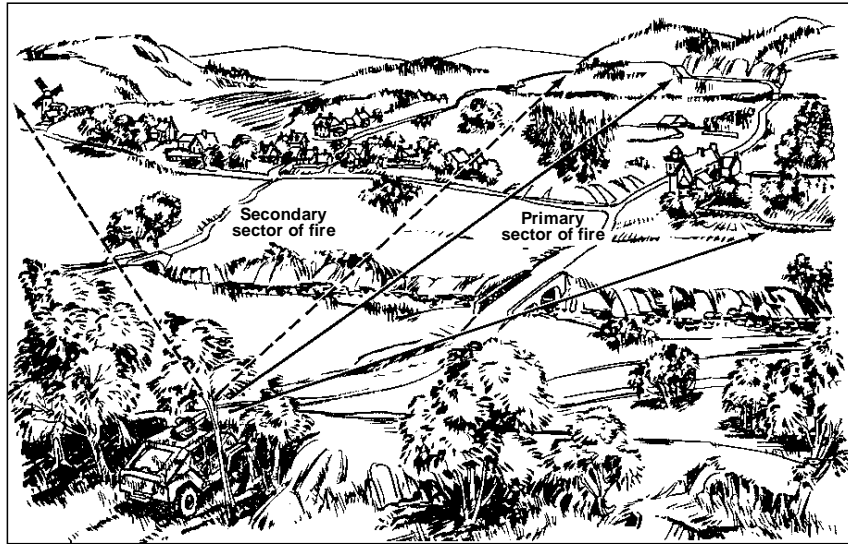


Figure 1. Primary and secondary sectors of fire.

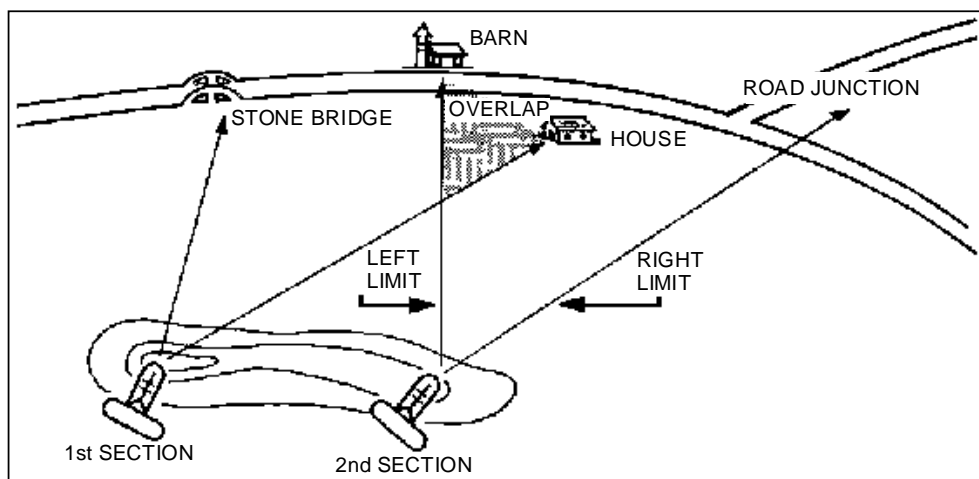


Figure 2. Overlapping sectors of fire.

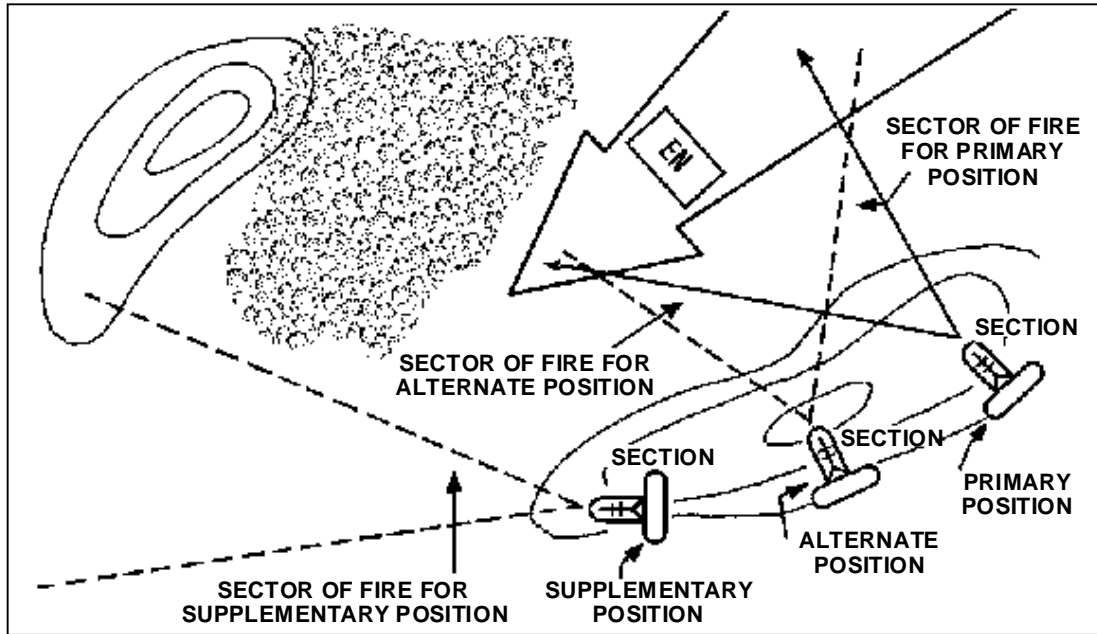


Figure 3. Primary, alternate, and supplementary positions.

3. Show all constructed or emplaced mines, obstacles, and booby traps using appropriate military symbols. Also show how to cover any obstacles.
4. Write in the unit's designation and the date-time group.
5. Show the observation posts and the withdrawal routes back to squad, section, and platoon areas.
6. Show the dead spaces.
7. Show magnetic north.
8. Show maximum engagement lines and engagement areas. You can also add phase lines, signals, and criteria to start or stop firing (engage or disengage).
9. Make a second copy of the completed section sector sketch (Figure 4) so that you can keep one and send the other to the platoon leader. The platoon's SOP should state how soon, after occupying the position, the section leader must forward the sketch to the platoon leader.

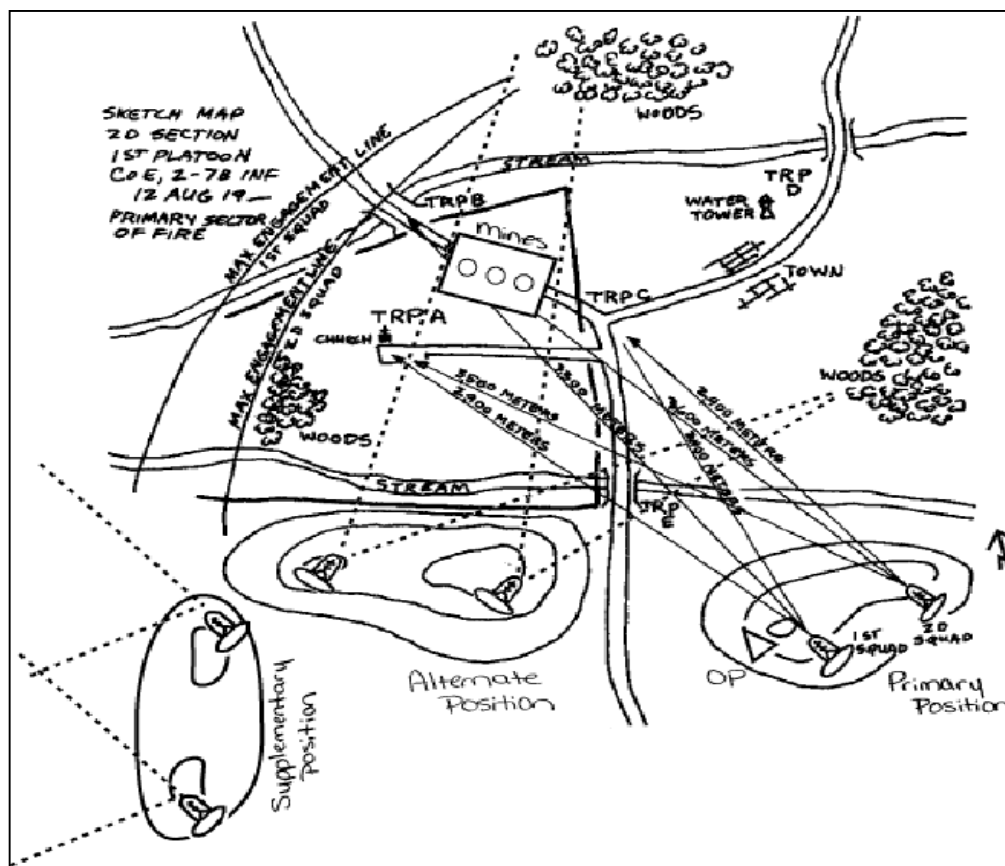


Figure 4. Section sector sketch.

EVALUATION PREPARATION

Setup: At the test site, provide all materials and equipment given in the task conditions statement. Provide positions for all crew-served weapons assigned to the section-size element.

Brief Soldiers: Tell the element leader to prepare a sector sketch, to include an overlay. The sketch will include a sector of fire for each weapon available to his element. Tell him to be sure to include any other useful information that will improve the sketch.

EVALUATION GUIDE

Performance Measures

1. Show the entire element's sector in the sector sketch.

Results

P F

Performance Measures	Results	
2. Label the target reference points.	P	F
3. Show all constructed or emplaced mines, obstacles, and booby traps.	P	F
4. Write in the unit's designation and date-time group.	P	F
5. Show the observation posts.	P	F
6. Show the dead spaces.	P	F
7. Show magnetic north.	P	F
8. Show the maximum engagement lines.	P	F
9. Draw the appropriate military symbols.	P	F
10. Show the primary, alternate, and supplementary weapon positions.	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required	Related
None	FM 7-7J
	FM 7-8
	FM 7-91
	FM 101-5-1

Section V. 11H40 TASKS

BASIC TACTICS

MANAGE AN M220-SERIES LAUNCHER SYSTEM BATTERY PROGRAM 071-316-2800

CONDITIONS

Given TOW battery charger(s) (PP-4884 [XO-1]/T), TOW batteries, an AN/TAS-4 nightsight battery charger(s) (PP-7382/TAS), batteries as well as TM 9-2350-259-10, TM 9-6130-470-12, and TM 9-5855-254-14.

STANDARDS

As a minimum, ensure that TOW batteries are recharged monthly and AN/TAS-4 nightsight batteries are recharged after two hours of use or when discharged; battery accountability is maintained; defective batteries are identified and replaced; required preventive maintenance on both batteries and chargers is performed IAW applicable technical manuals.

TRAINING AND EVALUATION **Training Information Outline**

1. Manage TOW battery program. To effectively manage a unit battery program.
 - a. Develop a way of identifying when batteries are due for recharging. To do this, design battery control log or chart showing the battery numbers, condition of the batteries, and the date when the batteries were last charged (Figure 1). Maintaining a log or chart ensures that all batteries are recharged regularly, assist in identifying batteries that require excessive charging (indicating that they might be defective), and assist in maintaining battery accountability.
 - b. Label all batteries after recharging.

NOTE: Batteries normally have a plastic-coated plate attached with spaces provided in which the day, month, and year can be written with a grease pencil. Or, a strip of masking tape can be attached to the batteries and the date recorded (day, month, and year.)

- c. Ensure that personnel turn in TOW batteries for recharging every 30 days (whether the batteries were used or not).
 - d. Ensure that personnel rotate the use of their batteries. A battery that is never charged or discharged may lose its ability to hold a full charge.
 - e. Batteries for the AN/TAS-4 nightsight (when issued) should be charged for a duration of 15 hours (\pm 45 minutes) for about 2 hours of use.

NOTE: When the battery monitor in the nightsight indicates that the charge is down to less than 10 minutes, the battery should be recharged.

BATTERY CONTROL LOG				
BATTERY NO.	CONDITION/STATUS	CHARGED	DUE RECHARGE FOR	DATE TURNED IN
1	Good	16 March 99	16 April 99	
2	Defective	-----	-----	17 March 99

Figure 1. Example format for battery control log.

2. Perform preventive maintenance of batteries and chargers.
 - a. Ensure batteries are kept clean.
 - b. Visually inspect for damage and water.
 - c. Spot paint as needed.
 - d. Perform operator's and unit maintenance on the TOW battery charger PP-4884 (XO-1/T) IAW TM 9-6130-470-12 and on the PP-7382/TAS IAW TM 9-5855-254-14.

EVALUATION PREPARATION

Setup: Provide the soldier with all the equipment listed in the conditions statement.

Brief Soldier: Tell the soldier to manage an M220-series launcher system battery program IAW Section III of the appropriate technical manual.

SELF-EVALUATION GUIDE

Performance Measures	Results	
1. How often should TOW batteries be recharged?	P	F
2. What information should be on the log or chart for battery recharging?	P	F
3. How long should the AN/TAS-4 battery be charged?	P	F
4. When should an AN/TAS-4 battery be charted?	P	F
5. Upon completion of charging, what information should be recorded on the plastic-covered plate on the battery?	P	F

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required	Related
TM 9-2350-259-10	None
TM 9-6130-470-12	
TM 9-5855-254-14	

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ANSWER SHEET

1. Monthly (every 30 days).
2.
 - a. Battery numbers.
 - b. Condition of the batteries.
 - c. Date when the batteries were last charged.
3. 15 hours \pm 45 minutes.
4. When the battery monitor in the nightsight indicates that the charge is down to less than 10 minutes.
5. Day, month, and year charged.

COORDINATE WITH SUPPORTED UNITS

071-600-0009

CONDITIONS

Given an assignment as the section sergeant, platoon sergeant, or acting platoon leader of a TOW platoon or section attached to a unit participating in an offensive or defensive operation.

STANDARDS

Coordinate with the supported unit, to include stating the time and reporting location, the unit's mission, the friendly and enemy situation, and what logistical support your platoon or section will need.

TRAINING AND EVALUATION

Training Information Outline

After receiving an order of attachment to a unit for an offensive or defensive operation, coordinate with the commander or leader of the supported unit. If you receive the order while other leaders are present, take that opportunity to coordinate as much as possible. This will help avoid delays in the operation. While many of the details that must be coordinated will vary with the situation, essential items must always be coordinated.

1. In the offense, coordinate the following:
 - a. Movement routes, to ensure that you and the supported unit can provide mutual support-by-fire, that you can maintain maneuver, and that you can cover the supported unit's movement routes.
 - b. Visual signals such as arm-and-hand signals and pyrotechnics.
 - c. Radio frequencies and call signs.
 - d. Resupply.
2. In the defense, coordinate to ensure that you can provide interlocking TOW fires and mutually coordinate those fires with the supported unit. Coordinate--
 - a. The location of the supported unit's primary, alternate, and supplementary positions.
 - b. The sector(s) of fire.
 - c. Dead spaces.
 - d. TRPs.
 - e. The location of any troops or vehicles forward of the FEBA.
 - f. Signals.
 - g. Patrols and ambushes (size, type, time of departure and return, and routes).
 - h. Radio frequencies and call signs.
 - i. Resupply.

EVALUATION PREPARATION

Setup: In the offense, provide a field location with varying terrain and give an operational briefing. In the defense, provide a field location with varying terrain, give an operational briefing, and assign sectors of fire.

Brief Soldier: Inform the element leader that he is to coordinate with the commander/leader of the unit of attachment. Tell him whether the mission is to be an offensive or defensive operation.

EVALUATION GUIDE

Performance Measures

Results

- | | | |
|--|---|---|
| 1. Coordinate with the commander/leader for offensive operations. <ul style="list-style-type: none">a. Movement routes.b. Visual signals.c. Radio frequencies and call signs.d. Resupply. | P | F |
| 2. Coordinate with commander/leader for defensive operations. <ul style="list-style-type: none">a. Location of primary position.b. Location of alternate position.c. Location of supplementary position.d. Sector(s) of fire.e. Dead space(s).f. Locations of troops or vehicles forward of the FEBA.g. Signals.h. Patrols and ambushes (times and sites).i. Radio frequencies and call signs.j. TRPs.k. Resupply. | P | F |

FEEDBACK

If the soldier passes all steps, score him GO. If he fails any steps, score him NO-GO, then show him what he did wrong and how to do it correctly.

REFERENCES

Required

None

Related

FM 7-8
FM 7-91

APPENDIX A

PROPONENT SCHOOL OR AGENCY CODES

The first three digits in a task number indicate the proponent or school who owns the task. The following table lists the codes of the proponents whose tasks are mentioned in this manual.

- 031 US Army Chemical School
ATTN: ATZN-CM-FI
Fort McClellan, AL 36203-5020
Internet: <http://www.mcclellan.army.mil>
- 051 US Army Engineer School
ATTN: ATZA-TDI-C
Fort Belvoir, VA 22060-5291
HQBN: (703) 656-5045/5054
Information DSN 655-6700/CML (703) 545-6700
Post Locator: DSN 655-2043/CML (703) 805-2043
Internet <http://www.hqbn.belvoir.army.mil/hhcsa.htm>
- 061 US Army Engineer School
ATTN: ATSF-DI
Fort Sill, OK 73503-5600
Internet <http://sill-www.army.mil/doim/Staff%20Dir/Contents/Contents.htm>
- 071 US Army Infantry School
ATTN: ATSH-OTT-T
Fort Benning, Ga 31905-5593
E-mail: hammond@benning.army.mil
- 113 US Army Signal Center
ATTN: ATZH-TD-A
Fort Gordon, GA 30905-5070
Internet: <http://www.gordon.army.mil/ng/poc/default.htm>
- 171 US Army Armor School
ATTN: ATSB-DOTD-TD
Fort Knox, KY 40121-5202
Internet: <http://www.knox.army.mil/dtdd/#poc>

APPENDIX B

EXAMPLE COMPLETED FORMS

Reproduce DA Forms 5164-R and 5165-R from STP 21-24-SMCT on 8 1/2-inch by 11-inch paper. You will find them at the back of the manual. On the next two pages of this appendix, you will find a completed example of each of these forms.

Figure 1. Example completed DA Form 5164-R.

B-3

GLOSSARY

ACRONYMS AND ABBREVIATIONS

ACCP	Army Correspondence Course Program
ANCOC	Advanced Noncommissioned Officer Course
APC	armored personnel carrier
AR	Army regulation
ARTEP	Army Training and Evaluation Program
ATGM	antitank guided missile
attn	attention
az	azimuth
BNCOC	Basic Noncommissioned Officer Course
BPC	battery power conditioner
CM	control monitor
co	company
CVC	combat vehicle crewman (helmet)
DA	Department of the Army
en	enemy
EOD	explosive ordnance disposal
F	Fahrenheit
FEBA	forward edge of the battle area
FH	frequency hopping
FOV	field of view
FPF	final protective fire
FM	field manual, frequency modulation
freq	frequency
HE	high explosive
hq	headquarters
IAW	in accordance with
inf	infantry
ITV	improved TOW vehicle
km	kilometer
LAW	light antitank weapon
LBE	load-bearing equipment
loc	location
LR	laser range finder

m	meter
METL	mission-essential task list
MGS	missile guidance set
mm	millimeter
MOS	military occupation specialty
MOUT	military operations on urbanized terrain
MSR	missile simulation round
MTP	mission training plan; MOS training plan
NBC	nuclear, biological, chemical
NCO	noncommissioned officer
NFOV	narrow field of view
OP	observation post
OPORD	operation order
OSUT	one-station unit training
PGTS	Precision Gunnery Training System
PLDC	Primary Leadership Development Course
PMCS	preventive maintenance checks and services
PPE	protective posture equipment
RCU	remote control unit
SINGARS	single-channel ground (and) airborne radio subsystem
SL	skill level
SM	soldier's manual
SMCT	soldier's manual of common tasks
SOI	signal operation instructions
SOP	standing operating procedure
STP	soldier's training publication
sust	sustainment
TFTT	TOW Field Tactical Trainer (TFTT)
TGT	TOW Gunnery Trainer
TG	trainer's guide
thru	through
TM	technical manual
tng	training
TOW	tube-launched, optically tracked, wire-guided
TRADOC	United States Training and Doctrine Command
TRP	target reference point
TSEC/KY	telecommunication security cryptographic speech
US	United States

USMTF United States message text format

VPC vehicle power conditioner

WFOV wide field of view

REFERENCES

DOCUMENTS NEEDED

These documents must be available to the intended users of this publication.

AR 200-1	Environmental Protection and Enhancement. 21 February 1997.
AR 310-50	Authorized Abbreviations and Brevity Codes. 15 November 1985.
ARTEP 7-91-DRILL	Drills for the Antiarmor (TOW) Company/Platoon/Section. 12 October 1989.
ARTEP 7-91-MTP	Mission Training Plan for the Antiarmor Company/Platoon/Section. 15 February 1990.
DA Pamphlet 25-30	Consolidated Index of Army Publications and Blank Forms. 1 July 1999.
DA Pamphlet 251-20	Army Correspondence Course Program Catalog. 1 October 1998.
FM 25-100	Training the Force. 15 November 1988.
FM 25-101	Battle Focused Training. 30 September 1990.
STP 7-11BCHM1-SM	Soldier's Manual MOS 11B, 11C, 11H, and 11M Infantry, Skill Level 1. To be published.
STP 7-11BCHM14-SM	Soldier's Manual MOS 11B, 11C, 11H, and 11M Infantry, Skill Levels 1, 2, 3, and 4. 30 September 1988.
STP 7-11BCHM24-SM	Soldier's Manual MOS 11B, 11C, 11H, and 11M Infantry, Skill Levels 2, 3, and 4. To be published.
STP 21-1-SMCT	Soldier's Manual of Common Tasks, Skill Level 1. 1 October 1994.
STP 21-24-SMCT	Soldier's Manual of Common Tasks, Skill Levels 2 through 4. 1 October 1992.
TC 5-400	Unit Leader's Handbook for Environmental Stewardship. 29 September 1994, with Change 1, 3 October 1995 and Change 2, 25 July 1997.

READINGS RECOMMENDED

These readings contain relevant supplemental information.

FM 5-34	Engineer Field Data. 14 September 1987.
FM 5-250	Explosives and Demolitions. 30 July 1998, with Change 1, 30 June 1999.

FM 6-20-20	Tactics, Techniques, and Procedures for Fire Support at Battalion Task Force and Below. 27 December 1991.
FM 7-7J	Mechanized Infantry Platoon and Squad (Bradley). 7 May 1993.
FM 7-8	Infantry Rifle Platoon and Squad. 22 April 1992.
FM 7-10	The Infantry Rifle Company. 14 December 1990.
FM 7-91	Tactical Employment of Antiarmor Platoons, Companies, and Battalions. 30 September 1987.
FM 21-26	Map Reading and Land Navigation. 7 May 1993.
FM 21-60	Visual Signals. 30 September 1987.
FM 23-1	Bradley Gunnery. 18 March 1996.
FM 23-34	TOW Weapon System. 17 August 1994.
FM 23-65	Browning Machine Gun, Caliber .50 HB, M2. 19 June 1991.
FM 25-4	How to Conduct Training Exercises. 10 September 1984.
FM 71-1	Tank and Mechanized Infantry Company Team. 26 January 1998.
FM 101-5-1	Operational Terms and Graphics. 30 September 1997.
TM 9-1005-213-10	Operator's Manual: Machine Gun, Caliber .50, Browning, M2 Heavy Barrel, Flexible. 6 August 1992, with Change 1, 1 August 1995 and Change 1, 6 August 1996.
TM 9-1425-450-12	Operators and Organizational Maintenance Manual for TOW 2 Weapon System. 25 May 1983, with Changes 1 through 12 dated 2 April 1984 through 8 December 1997.
TM 9-2350-259-10	Operator's Manual for Combat Vehicle, Antitank, Improved TOW Vehicle, M901A1. 30 April 1990, with Changes 1 through 5 dated 28 September 1990 through 28 November 1994.
TM 9-5855-254-14	Operator, Organizational, Direct Support and General Support Maintenance Manual for Charger, Battery, PP-7382/TAS. 24 March 1995.
TM 9-6130-470-12	Operator's and Organizational Maintenance Manual for Battery Charger PP-4884A/T (TOW Heavy Antitank/Assault Weapon System). 5 December 1975, with Changes 1 through 4 dated 1 September 1978 through 18 November 1992.

REFERENCED FORMS

These optional forms are locally reproducible from STP 11-24-SMCT.

DA Form 5164-R Hands-On Evaluation. 1 October, 1992.

DA Form 5165-R Field-Expedient Squad Book. 1 October, 1992.

ELECTRONIC MEDIA

If the manual you are looking for is available in electronic media, you can view it at any DA library using the latest CD-ROM version of DA Pamphlet 25-30.

INTERNET

You may be able to view, save, or print some manuals from the Internet. Make sure to download only approved documents from official Army web sites such as the following:

<http://www.usapa.army.mil> **U.S. Army Publishing Agency**

From this site, you may view or download FM 200-1, and you may be able to obtain other electronic administrative departmental publications and forms, to include Army Regulations; Department of the Army circulars, forms, and pamphlets; optional forms; standard forms; and Department of Defense forms:

<http://www.adtdl.army.mil> **Army Doctrinal Literature Digital Library**

From this site, you may view or download FM 5-250, and you may be able to obtain other Army Doctrinal and Training Publications (except engineering & medical), to include field manuals, professional bulletins, training circulars, and soldier training publications:

<http://www.logsa.army.mil/> **USAMC Logistics Support Activity**

From this site, you may view or download TM 9-1425-450-12 and TM 9-2350-259-10.

STP 7-11H14-SM-TG
1 MARCH 2000

By Order of the Secretary of the Army:

Official:



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